REPORT RESUMES

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BIENNIAL CONFERENCE OF THE AMERICAN ASSOCIATION OF
INSTRUCTORS OF THE BLIND (48TH, SALT LAKE CITY, JUNE 26-30,
1966).

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THE THEME OF THE CONVENTION WAS "RESEARCH--KEY TO PROGRESS," AND PAPERS WERE DELIVERED IN THE FOLLOWING AREAS (1) RESEARCH ON THE TEACHING OF READING AND IMPROVING READING SKILLS, (2) RESEARCH ON INDEPENDENT LIVING SKILLS AND ORIENTATION, MOBILITY, AND TRAVEL, (3) RESEARCH ON THE CHILD WITH LIMITED BUT USEFUL VISION, (4) RESEARCH ON THE MULTI-HANDICAPPED CHILD, AND (5) RESEARCH ON LISTENING, TECHNICAL DEVICES, AND TEACHING METHODS. SPECIAL PAPERS AND REPORTS WERE GIVEN ON THE FOLLOWING SUBJECTS (1) PHILOSOPHY AND GOALS OF A PRESCHOOL PROGRAM, (2) HOW SHALL WE SERVE OUR VISUALLY HANDICAPPED PRESCHOOL CHILDREN, (3) LIBRARIES AND LIBRARY SERVICES FOR VISUALLY HANDICAPPED, AND (4) ENRICHMENT THROUGH A TOUCH AND LEARN CENTER. PRESIDENTIAL, COMMITTEE, AND BUSINESS REPORTS ARE INCLUDED. (MU)

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48th biennial conference

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AMERICAN ASSOCIATION OF INSTRUCTORS OF THE BLIND

U.S. DEPARTMENT OF HEALTH, EDUCATION & WELFARE
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AAIB

THE AMERICAN ASSOCIATION OF INSTRUCTORS OF THE BLIND, INC.

The American Association of Instructors of the Blind began in 1853 with a national meeting of superintendents of the 16 residential school for the blind. Biennial conventions were continued where professional papers and reports were read.

In 1952, when the AAIB was almost 100 years old, the Workshop method of national convention was adopted and the membership was opened to all who were interested in improving the educational opportunities of all visually handicapped children through provision for individual memberships for the first time.

In the Workshops, educators are able to define problems and work actively toward their solutions. Workshops elect officers and work continues between conventions by mail and regional meetings.

The AAIB publishes a newsletter called the Fountainhead, its conference proceedings, and provides the professional magazine, The International Journal for the Education of the Blind for its members.

The AAIB participates actively in teacher and houseparent certification, professional meetings and workshops, training institutes, the development of special standards, the encouragement and report of research in the field, and cooperation with national and international agencies and organizations interested in the education of visually handicapped children and youth.

The AAIB is affiliated with The Council For Exceptional Children, a Department of the National Education Association.

For further information about any AAIB activity, write to the AAIB Executive Secretary,
711 Fourteenth Street N.W., Washington, D.C. 20005.

Meetings

The following is a list of the conventions of the American Instructors of the Blind (1853-1871) and the American Association of Instructors of the Blind (1872-1966):

1st Meeting: August 16-18, 1853 at New York, New York.
* 2nd Meeting: August 8-10, 1871 at Indianapolis, Indiana.
3rd Meeting: August 20-22, 1872 at Boston, Massachusetts.
* 4th Meeting: August 18-20, 1874 at Batavia, New York.
5th Meeting: August 15-17, 1876 at Philadelphia, Pennsylvania
6th Meeting: August 21-23, 1878 at Columbus, Ohio.
7th Meeting: August 17-19, 1880 at Louisville, Kentucky.
* 8th Meeting: August 15-17, 1882 at Janesville, Wisconsin.
9th Meeting: August 19-21, 1884 at St. Louis, Missouri.
10th Meeting: July 6-8, 1886 at New York, New York.
* 11th Meeting: July 10-12, 1888 at Baltimore, Maryland.
12th Meeting: July 15-17, 1890 at Jacksonville, Illinois..
13th Meeting: July 5-7, 1892 at Brantford, Ontario, Canada.
14th Meeting: July 17-19, 1894 at Chautaugua, New York.
15th Meeting: July 14-16, 1896 at Pittsburgh, Pennsylvania.
16th Meeting: July 12-14, 1898 at Lansing, Michigan.
17th Meeting: July 9-11, 1902 at Raleigh, North Carolina.
* 18th Meeting: July 20-22, 1904 at St. Louis, Missouri.
* 19th Meeting: August 21-23, 1906 at Portland Oregon, at Salem, Oregon and at Vancouver, Washington.
* 20th Meeting: July 14-16, 1908 at Indianapolis, Indiana.
* 21st Meeting: June 28-July 1, 1910 at Little Rock, Arkansas.
22nd Meeting: June 25-28, 1912 at Pittsburgh, Pennsylvania.
23rd Meeting: June 28-30, 1915 at Berkeley, California.
* 24th Meeting: June 4-7, 1916 at Halifax, Nova Scotia, Canada.
* 25th Meeting: June 24-28, 1918 at Colorado Springs, Colorado.
26th Meeting: June 21-25, 1920 at Overlea, Maryland.
* 27th Meeting: June 27-30, 1922 at Austin, Texas.
* 28th Meeting: June 23-27, 1924 at Watertown, Massachusetts.
* 29th Meeting: June 21-25, 1926 at Nashville, Tennessee.
* 30th Meeting: June 25-29, 1928 at Faribault, Minnesota.
* 31st Meeting: June 23-27, 1930 at Vancouver, Washington
* 32nd Meeting: June 27-July 1, 1932 at New York, New York.
* 33rd Meeting: June 25-28, 1934 at St. Louis, Missouri.
* 34th Meeting: June 22-25, 1936 at Raleigh, North Carolina.

* 35th Meeting: June 27-30, 1938 at Lansing, Michigan.
* 36th Meeting: June 24-28, 1940 at Pittsburgh, Pennsylvania.
* 37th Meeting: June 26-30, 1944 at Little Rock, Arkansas.
* 38th Meeting: June 24-28, 1946 at Watertown, Massachusetts
* 39th Meeting: June 21-25, 1948 at Austin, Texas.
* 40th Meeting: June 26-30, 1950 at Philadelphia, Pennsylvania.
* 41st Meeting: June 29-July 3, 1952 at Louisville, Kentucky.
* 42nd Meeting: June 27-July 1, 1954 at Batavia, New York.
* 43rd Meeting: June 24-28, 1957 at Worthington, Columbus, Ohio.
44th Meeting: June 22-26, 1958 at Vancouver, Washington.
* 45th Meeting: June 26-30, 1960 at Donelson, Tennessee.
* 46th Meeting: June 28-July 2, 1962 at Miami Beach, Florida.
* 47th Meeting: June 21-25, 1964 at Watertown, Massachusetts.
* 48th Meeting: June 26-30, 1966 at Salt Lake City, Utah.

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*Copies of Convention Proceedings for years marked with an asterisk may be purchased in limited quantities from the AAIB office, 711 Fourteenth Street N.W., Washington, D.C. 20005. Prices range from $1.00 to $3.50 per copy. Three Indexes are also available at $.50 each; Index of the 1922-30 Proceedings, Index of the 1932-40 Proceedings and Index of the 1944-60 Proceedings.

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ADVENTURES IN THE WORLD OF RESEARCH

Dr. Donald Brieland

Professor, School of Social Science Administration
The University of Chicago
Chicago, Illinois

It is a sign of maturity in the illustrious history of this organization not only that you have chosen research as the theme of your conference but with this technical topic over 400 people are already in attendance.

The research world is a broad world - a world of adventure, a world of challenge. Research as it relates to the blind ranges all the way from the use of the computer to write braille to the evaluation of psychotherapy with disturbed blind people. All aspects of research require creativity. They lead us to the questions: what needs testing; what should be studied; how can it be studied successfully; and, even more important with limited money and manpower, what are the priorities? Each field must answer these questions for itself and answer them thoughtfully and planfully. These are some of your jobs at the conference.

I will indicate some of the major shortcomings in research, in education, and in the behavioral sciences. Then I will look at the field of service to the blind and, especially education of blind children.

There are five charges that we might look at concerning research. First, there is too little of it. Second, the projects are too disparate or scattered. Third, the research is too atheorectical or, to put it in English, it is not based enough on sound theory. Fourth, samples are too small; aggregations of people who really should be treated as individual cases and not grouped. And finally, too little publicity is given research findings.

Now let us look at these systematically, one by one. First, the charge that there is too little research. The gulf between services and the evaluation of those services is obvious to many of us. Many service-oriented people may not fear evaluation, but they still discourage it. Many times they go on doing things on the basis of self-validation and self-given "A's" for effort. In too few cases have people serving children in our schools or serving older people in rehabilitation programs stated their basic problems and concerns to researchers. Unless they do so, the major issues cannot be converted to researchable questions.

Service programs, more typically, have been passive sources of data for Ph.D's. My own was one of them.[1] I had the hunch that the literature on the speech and emotional problems of the blind child was probably right. I collected a number of these judgments from the literature and tested them out with a blind sample and a sighted control group. I found out that the literature was marked by a large number of stereotypes. For our sample of 84 pairs of children the stereotypes were not accurate. Many of the difficulties attributed to the blind child were not found. I had expected to validate statements in the literature. Not so. This was an adventure in the world of research. The findings were dramatic and unexpected. Nevertheless, the era of service programs being used hit and miss, helter-skelter, for master's thesis and doctoral thesis should come to an end.

We need more systematic research. The universities' special education programs are now the main source of research data. Names like Ted Newland and Sam Ashcroft come to mind. A few people turn out a great deal of research themselves and through their students. But there are too few. A tremendous opportunity for research comes from the availability of federal funds for the establishment of on-going programs not only in schools for the blind alone but for research with a focus on the blind in state departments of education. It will be a tragedy if major institutions and departments of education, with the federal funds available, do not develop permanent research and evaluation units - not necessarily each one by itself but through cooperative programs to provide larger samples for study.

Research is often too disparate and too scattered. It is not programmatic. We tend to go on, project by project, grant by grant, idea by idea, with no line of research. Research projects become a series of dots that don't seem to relate to each other, that don't seem to get very far in view of the effort extended. Part of this comes, I think, out of the project grant system. In psychology we speak of "research bums" - the migrant laborers in the research vineyards. They are the people who follow research projects around, working on one grant after another, having no tenure but working on a series of unrelated projects for a series of institutions.

The plea here is for lines of research, for research programs, not unrelated project by unrelated project but project built upon project so that some of the underbrush can be cut away and specific areas can be mapped out.

Then, research tends to be too remote from theory. It is descriptive, often without even clarity of goals. It reminds me of the man who was hopelessly lost in a rural area and asked directions of a farmer out in a field near the roadway. The farmer gave him a very complicated set of directions. Then he said, "No, that isn't right." He started over and went through the process again. He tried it a third time. Finally, he said, "Well, you know, you just can't get there from here." There is a parallel to this in research. If you don't know what the input is, if you don't know what really happens, or why you want it to happen or what the goals are, it is extremely difficult to know how far along you have come.

There is a great literature on learning theory. There have been a dozen outstanding learning theorists, Hilgard, Guthrie, Skinner, Hull, to name a few. Yet, we have very little systematic application of learning theory in research with blind children. The principles are there, the learning problems are there, the challenge is there, but the product isn't being produced.

Research is limited by small samples and extreme groups. It is hard to establish relationships from extreme groups. I have just finished a follow-up study of extremely physically handicapped children. Our sample is small; some fifty cases were all that we could find to meet our criteria. If you look at the normal curve, they are on the tail of it somewhere. Nothing seems to correlate with anything else. I can use an analogy to suggest why we run into some of the same problems in research with blind groups. If you have the intelligence scores and the income of 10,000 business men in a large city like Chicago or New York or San Francisco, you would find a significant correlation between salary and intelligence. The large sample would approximate the characteristics of a normal curve. But if you had the 20 business men in the same city who had the highest income, the correlation between their income and their intelligence scores would be about zero. With small, highly selected groups relationships are not clear.

We need larger samples. It is important to schools for the blind to cooperate for purposes of study and research to make it possible to apply standard statistical tests and derive generalizations more effectively than we have been able to.

Finally, results of research are too little publicized. Certainly, the Journal of this Association provides an appropriate outlet. But some activities going on are little known. The psychological journals frequently publish studies with blind subjects that never get into the literature for the education for the blind. Psychologists may read them and not care much about them. You, who really care, don't have a chance to see them and so they might as well have never happened.

If the researcher wants to communicate his results most effectively to the field at large he often has to write two articles - one, a technical report, the other a translation, a popular report for the teacher and for the administrator. Maybe he shouldn't do the translation but rather collaborate with somebody in the service field.

The time lag in application of research is of interest. Even a useful, effective technique takes a long time to get accepted. Just one example - around 1954, reports were made about the advantages of speech compression to speed up recording perhaps 25 per cent or more without loss of intelligibility. That was a useful idea but not much has happened in the 12 years since it was presented.

There are two suggestions for programmatic research that impress me. I'll mention them as examples, nothing more. We find that about two-thirds of the blind children in this country, according to Jones' report for the Office of Education,[2] are in some kind of integrated program. As we know, integration is a continuum. In some cases almost the total school life of the child is with sighted children, in others a very limited segment is integrated. Various programs lie somewhere between these extremes. I know of no studies which deal with the sense of well-being or the self-concept of children in various types of programs and the change in these factors over time. It would have been harder to do research in this area a few years ago during the tremendous fight between residential and day class interest that generated more heat than light. There is now a chance for objective research. Start with the goals of an integrated program, describe the activities promote those goals, and procede to measure their effects. We might also ask what are the comparable goals in a residential setting, the processes to achieve them, and the results. The goal in this type of research is not to show that one system is better than the other, not to put the residential school out of business or to help the day classes stay in business, but rather to define and evaluate the process to see whether goals are being achieved.

The other area for proposed research is mobility training. Techniques were developed for adults, mainly veterans of World War II. They have been used for blind children without much evaluation. Five steps could be followed in an evaluation of mobility training: (1) set forth the goals and describe the techniques; (2) film the child at various points; before training, with two weeks of training, with two months of training, with six months of mobility training; (3) use a group of expert judges who are instructed in the goals; (4) play the film strips back in random order; and (5) ask the judges to determine which came first, which came second, which came third. If they can't do so accurately, has the mobility training program been successful? Or to suggest a related problem - can a readiness test be developed for mobility training?

If we are going to solve our manpower problem, researchers must be drawn from within the field and then be sent out to learn the specific research skills on the basis of their knowledge of the field and of interest in the research process. I am suggesting a "home-grown" process of building researchers rather than to import outside experts who never really engage themselves enough in the field to understand its issues. A real wedding of service and research would not be a shotgun approach of trivial single projects but would involve programmatic research, an articulation of basic theories, and means to operationalize them, and finally, measurement of movement of outcome.

Where larger samples are needed and cooperative programs are required, a professional organization of this kind is uniquely suited to play the role of encouraging and implementing research. Then too, we have to concentrate not only on childhood but on the full life cycle. I am amazed at the unreality of career outlets used in vocational training. The braille switchboard is an example. Many switchboards have already been replaced. The cord switchboard provides little hope of jobs for blind young people. We have an excellent example of new opportunity in the article by Sterling and Bauman[3] on the application of computer training. They outline the many vocational outlets for the blind in the computer field but stress that success depends upon previous science and math training. If the grade and high school teaching is sloppy, if it is overweighted by sympathy, if mathematical errors are excused, the person is in no position to train for a computer job. If the science and math teaching is of high quality, if standards and expectancies are high, the person is in a much better position. In other words, in terms of the life cycle, what we do in the grade school and high school has its effects on later vocational training programs and on college achievement as well.

The world of research is an interesting world. It is the realm designated for the expression of man's spirit of inquiry. It can provide - it must provide sharper goals, more efficient techniques, better performance, and ultimately lead to increased well-being for the child and the adult. Education for the blind has reached a stage where it should think its own thoughts about research and formalize its issues into researchable problems. It should devise more of its own research programs. It should train its own bright and promising personnel in specific research programs.

I am honored to share in your meeting. I hope that the fields I represent, psychology and social work, can make an increasingly significant contribution to the welfare and the well-being of blind children and adults.

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[1] Donald Brieland, "A Comparative Study of the Speech of Blind and Sighted Children," Speech Monographs, 1950, pp. 99-103.

[2] John W. Jones and Anne P. Collins, "Trends in Program and Pupil Placement Practices in the Special Education of Visually Handicapped Children," The International Journal for the Education of the Blind, XIV, 4(May, 1965), pp. 97-101.

[3] Theodore D. Sterling and Mary K. Bauman, "Employment Potential for the Blind in Computer Related Fields," The International Journal for the Education of the Blind, XV, 1(October, 1965), pp. 7-11.

THE SAN FRANCISCO STATE COLLEGE BRAILLE STUDY PROJECT

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The first part of The San Francisco Braille Project is really a study of the present status of braille reading instruction. We tried to find a cumulative description by sending out questionnaires which we asked the teachers in the schools to answer. We received replies from 50 residential schools, from which 130 teachers replied who were concerned with braille instruction on the primary level. We received replies from 258 different public schools, representing 390 teachers. This gave us the basis for a very complete description of what the present practices in braille reading instruction are.

In our questionnaire we asked such questions as: What grade of braille do you use in beginning braille reading instruction? With which hand do you encourage children to read? Does left-or right-handedness receive consideration in your program? Circle the finger or fingers which you encourage your children to use in reading. Who provides initial instruction in braille reading and how many are employed at your school in each category listed? When do you introduce braille writing? What do you use to teach beginning braille writing - slate and stylus or braille writer? We received very interesting replies to these questions, results which are quite different from those which we might have gotten 10, 20 or 30 years ago. For instance, there are only four public school classes which use slate and stylus to teach beginning writing and 283 that use the braille writer. In residential schools we found that there are only two who use slate and stylus and 68 teachers use braille writers. Two schools use pegboards and pegs.

The second part of our project includes an experimental study involving 200 blind pupils. We selected 50 students each in 4th grade public schools and in 4th grade residential schools, making a total of 100 fourth graders, and 50 students each on the 8th grade level in public schools and on the 8th grade level in residential schools, making a total of 100 eighth graders. Only six of the students have as much as 5/200 vision; all the others have less vision than that and must be regarded as practically blind; none of them has a marked additional handicap. These 200 students were given the STEP Reading Test (the Sequential Test of Educational Progress Reading Test) and the Stanford Achievement Reading Tests. They were timed on the STEP test. Every teacher was asked to fill out a questionnaire on each student which included a set of rather exhaustive questions describing the student and his behavior in reading. We asked for the students' IQ; his over-all grade level achievement; when he was first enrolled at the school, and when he started receiving braille reading instruction; the cause of blindness; the students' visual acuity; the age at the onset of blindness; whether the student reads with the left hand, the right hand, either hand, or both hands; if he uses both hands, does he use the left hand to find the next line, use the right hand to find the next line, read the next line with the left hand before finishing the preceding line with the right hand, or vice versa; and if the student reads with both hands moving together in parallel motion. Concerning the student who reads with one hand, left or right, we asked what are his reading fingers and then we enumerated the fingers and combination of fingers. We also asked if a student holds his braille book when reading, if he reads in an even flow, or stops and repeats words frequently, making frequent return sweeps over the line or over larger parts of it; if he rubs letters often, occasionally, hardly ever; if he loses his place; if he accompanies his reading with silent speech movements; what the students' primary mannerisms in reading are - rocking, head movements, eye poking, others (surprisingly, we got on the 4th grade level 62 and 60% with none and on the 8th grade level 68 and 78% with none); if the student is relaxed or tense when he reads; if posture is erect when he reads, tense, or excessively bent; and if he reads outside the classroom - avidly, occasionally, rarely, not known. Now of course we have the students' reading rates. We have STEP grade scores, SAT grade scores and the chronological ages in months. All this material is now going to the computer in order to determine what are the relations, what are the critical differences if any, what is the significance of these differences, what are the correlations of certain items with others, and so on. For instance, what is the correlation of the reading rate with comprehension, with the SAT and the STEP scores. This is the body of the study.

The third step of the study will consist of a Workshop at San Francisco State College from July 5 to 9, to which we have invited 15 experienced braille practitioners, braille teachers, to whom we want to present the outcomes of our research in order to get their interpretations and their advice on how these things ought to be evaluated and what significance they have from their point of view as experienced braille teachers. We think we will gain a great deal from this procedure in which a body of experienced braille practitioners is confronted with the results of a research study.

The last step of course will be the writing up of the study. This we hope will result in a book that should be of value to all those who are teaching braille in public schools and in residential schools or are preparing to do so.

THE RATE OF BRAILLE CHARACTER RECOGNITION AS A FUNCTION OF THE READING PROCESS

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There are many varying concepts of reading. Current literature in this field is rich with numerous definitions. Some authorities seek to be all-inclusive, expanding our concept of the scope and the complexity of the total process. I am sure that most of us are in agreement with these broad definitions that express the ultimate function of reading.

On the other hand there are leaders who would advocate that we delimit our concept of reading and be more explicitly definitive. For example, Charles Fries in Linguistics in Reading claims that we confound the issue by confusing reading and language development. He asserts that the only unique feature in reading is the graphic symbol. Therefore, in a pure sense, reading becomes the recognition of graphic symbols that represent an already well-developed pattern of oral language. Both the broad, comprehensive concept and the delimited, more selective one are defensible and of value.

Certainly, for the purpose of research in this area it is essential to analyze reading, define its components, and clarify the psychological processes involved in each basic skill. The investigator must design a plan in which he can hold other factors as constant as possible while he studies the effect of the one element upon which he is focusing. Yet he must never lose sight of the intricate multifactoral interaction within the total reading process. From the results of each bit of research, he forms new hypotheses for further testing. Ultimately, all of the findings fall into place together, making a composite picture that aids in the formulation and adjustment of principles and practices of teaching. Just such a program of research is currently under way through the Educational Research Department of the American Printing House for the Blind.

I have made these introductory observations hoping that they will help you to consider this particular project from the same perspective in which it was undertaken. It is a small project. It has several limitations, including its geographic confinement to one school and to a relatively small number of subjects. However, it was undertaken with the hope that it might contribute some little bit to the composite picture.

Some of the recent research seems to indicate that, for the braille reader, word recognition may be accomplished much more frequently through a progressive, character-by-character synthesis of the word rather than by means of immediate perception of the word pattern as a whole. It was my purpose, in the light of this hypothesis, to study what effect, if any, increasing the rate of isolated character recognition might have on the efficiency of the total reading process.

The research was set up as follows:

Pretesting and selection of subjects: Gates Basic Reading Test, Type A, Form 3 was ~~administered to grades three through~~ six. After a lapse of several days, Gates Form 2 was administered as a motivated pretest. Monetary recognition was offered to the subjects who, on Form 2, showed the greatest gain in rate of reading without decreasing their score in comprehension. This motivated pretest method was employed in an attempt to obtain a pre-treatment score which represented maximum ability and to stabilize the motivation factor throughout the project. It is interesting to note a significant increase in rate of reading on this motivated test, emphasizing again the importance of motivation to achievement.

Following this silent reading test, two groups were equated to serve as experimental and control subjects. The groups were equated according to sex, age, grade placement, I.Q., and scores on the Gates reading test. Twelve subjects were assigned to each group.

A second pre-treatment measure was obtained by administering a timed oral reading test individually to each subject of both groups. This was not a standardized test, but was a short story adapted from a reading series which was not familiar to any of the subjects. Errors of repetition, substitution, necessary aid, omission, insertion, mispronunciation, and loss of place were recorded during each timed reading. Although an oral check on comprehension followed the reading, this check was not included in the timing, as it is for the Gates silent reading test.

To obtain a third pre-treatment measure, a timed test in the recognition of isolated braille characters was administered. This test consisted of 220 characters. It included all of the 55 one-cell characters, each appearing as a stimulus, randomly, four times throughout the test. A subject's actual response was recorded in each case of error.

We then had three measures on each subject: rate and comprehension on the Gates silent reading test, rate and accuracy on the oral reading story, and rate and accuracy of character recognition.

Treatment: The second step in this project was an 18-day treatment program for the experimental group. The training was administered daily on an individual basis to each of the twelve subjects in the experimental group. It involved instruction to overcome errors in character identification plus practice to increase speed of recognition. The materials consisted of 20 different lists of braille characters. Each list contained a random order of the 55 one-cell characters. Initially, each subject read three lists per day. The number was increased until it reached six lists per day, and was maintained at that level. Each day's score was computed from the averages of reading time and errors for the two final lists of the day. The subject was motivated to improve his own record from day to day. A few other types of exercises for practice in character discrimination were interspersed throughout the treatment period, in order to stimulate continued interest. The best daily average made by any subject on the oral reading of these lists was slightly less than 29 seconds.

Post tests: At the conclusion of the 18 days of treatment, three post tests were administered to all subjects in both groups. Rate and accuracy of character recognition were again measured by means of a test requiring the oral reading of 220 characters. All errors were recorded.

Rate and accuracy of oral reading were measured by means of a short story. Again, this was not a standardized test, but was an adaptation of another part of the same material used for the pretest. Although these two reading measures were not strictly parallel forms, any variability was a constant for both groups.

Finally, a third form of the Gates Basic Reading Test, Type A - Form 4 - was used to measure rate and comprehension of silent reading. This was again a motivated test, with monetary recognition offered to the subjects who, without decreasing their degree of comprehension, made the greatest gain in rate over their score on the motivated pretest.

Rather than attempt to present a great deal of tabular information, I will merely give the most significant results of this research.

In the first place, the training proved effective in increasing the rate and accuracy of character recognition. This result was to be expected. The experimental group decreased their reading time by 40 percent and the control group by 14 percent. The improvement between pretest and post test and the difference on the post test between groups in favor of the experimental subjects were both statistically significant below the .01 level.

An examination of the accuracy of identification of these one-cell characters reveals that for all subjects of both groups on the character pretest the mean number of errors was slightly over 43, or approximately one error per five characters. This finding would suggest that our students do not adequately develop character discrimination through the normal reading process. On the final test the experimental group decreased their mean number of errors by 83 percent, while the controls decreased by 13 percent. On this final test the experimental group had 59 percent fewer errors than did the controls. These results are obviously significant.

But our main question was whether or not increasing the speed and accuracy of isolated character recognition would have any significant effect on the total reading process. So, we turn to the second measure - that of oral reading. The experimental group improved their mean rate by ten words per minute - from 73 to 83 words per minute. The control group made no gain. In fact they had a fractional loss. An analysis of the pre- and post stories revealed that the words were slightly longer in the final story than in the initial one, so we converted rates into characters per minute rather than words per minute. On this basis both groups showed a gain. The experimental group made a 25 percent gain, while the controls made an 8 percent gain. Regardless of which unit was used as a basis of measurement, the gain in post test over pretest and the gain of the experimental group over the control group on the post test were both significant below the .01 level.

As far as accuracy of oral reading is concerned, both groups improved. The experimental group had a 22 percent decrease in the number of errors, as compared to an 8 percent decrease for the controls. Although this difference is not statistically significant at the .01 level, it does indicate an absolute gain in accuracy in favor of the experimental group.

On the longer Gates silent reading test, which was the third measure, although the gains on the post test were not statistically significant, they were still directional in favor of the experimental group. Sixty-four percent of this group increased their reading rate without detriment to their comprehension score, while 22 percent of the control group showed an increase in rate with no decrease in comprehension.

Therefore we can say that, under the conditions of this study, increasing the rate of identification of isolated braille characters was accompanied by a significant increase in the rate and accuracy of the total reading process. The results of this study would suggest the advocacy of broader, more comprehensive research on the function of individual character recognition and word synthesis in the process of braille reading.

PERCEPTUAL FACTORS IN BRAILLE WORD RECOGNITION

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Since the beginning of 1960, Cleves Kederis and I at the American Printing House have been studying the perceptual processes involved in the tactual recognition of braille words. To this time, 14 studies related to this problem have been completed. Our studies in this area, to a great extent, are analogous to the types of studies that have concerned perceptual factors in print reading.

Print reading studies, which are extensive, have taken a variety of forms. For example, photographic studies of eye movements during reading have revealed that the eyes move irregularly with brief fixations and that perception occurs during the fixation periods. Tachistoscopic studies of the behavior of skilled print readers have shown that groups of letters, words and groups of words are recognized at the same amount of exposure as required for individual letters of the alphabet. Other rapid exposure studies of word recognition have identified certain stimulus characteristics which affect word perception. The general conclusion from this research has been that familiar words are perceived as wholes by means of their total structure under the influence of certain characteristics of their components. It is from this source that the concept of "whole word" reading stems.

In the case of braille reading, while it has not been explicitly demonstrated, it does seem to be assumed by many that tactual reading proceeds in a manner similar to print. One educator has written, "The children soon learn the shapes of words and groups of words and later recognize them as whole words." Another says, "Most (blind) children, however, learn rather quickly to recognize words as wholes by their shapes...." The number of such statements appearing in the tactual reading literature gives evidence of considerable agreement among educators on this question.

It was within this framework that the research described in this paper originated. Its purpose was to study perceptual factors in braille word recognition in order to more clearly delineate the cues that make braille whole word recognition possible. Knowledge of the factors important to perception in braille reading could have wide application in design of instructional methods, refinement of remedial reading techniques and, possibly, development of training programs for increasing braille reading speeds.

The procedure used in most of our studies has followed the same general pattern. Subjects have been high school students. They have been selected from the upper and lower thirds of the distribution for reading speeds at these grade levels. However, only subjects who comprehended at a relatively high level were selected. Participants in the experiments were required to recognize braille words and characters under conditions of controlled time of exposure. The words were first exposed for time intervals below those necessary for recognition. Then exposure times were systematically increased until the subjects were correctly able to identify the stimulus. The basic data for the studies consist of recognition thresholds for the braille words and characters and of the errors made by the subjects prior to recognition.

As you might guess, the findings of our studies are quite extensive. One thing that our findings do is to reveal the great complexity of the braille reading process. Many things determine the time of exposure necessary for tactual word recognition. For example, the time required to read words increases as words become longer and as words decrease in familiarity. Words with many dots occurring in the lowest row of the braille cell take longer to recognize than words with fewer dots in this position. Words containing contractions are more difficult to recognize than words without contractions. The more contractions a word contains the longer it takes to recognize it. These factors combine to augment the effects of one another.

As was just mentioned, the time required for tactual recognition of words is positively related to the number of characters they contain. In several of our studies, we have determined the length of time necessary to recognize the individual braille characters contained in our stimulus words. When we compare the time necessary to recognize a word with the sum of the times required to recognize the characters it contains, we generally find that the word recognition time is longer. This is, of course, opposite to findings for regular print reading.

This evidence leads us to believe that the perceptual unit in braille word recognition is not the whole word shape, but is the individual braille character. The process of word recognition appears to be a sequential integrative one in which word recognition is the result of the accumulation of pieces of information over a temporal interval. Generally speaking the braille reader accumulates information as he moves from cell to cell, some integration of this information is made as this sequence occurs, and, often a significant amount of time is required after the last character is sensed before all the information is integrated to arrive at a word percept. This process is most obvious in the reading of unfamiliar words.

That there are exceptions to this general conclusion should be apparent immediately. In many instances in our studies readers identified words correctly before they had touched all the characters the word contained. This happening rarely occurred with words of three characters or among any unfamiliar words. However, as the number of characters in words increased, the probability of recognition before all characters were sensed also increased. The explanation for this phenomenon very likely is that the skilled braille reader employs a far greater variety of cues in word recognition than is directly available from the braille characters themselves.

As in the case for other perceptual activities, word recognition appears to be based on a probabilistic model of the braille reading environment. In other words, in the course of developing skill the reader learns that certain things tend to follow one another and utilizes these relationships in word recognition. Evidence for probability learning exists even at the level of simple character recognition. In our research, we have exposed individual braille characters at times that were too short for most readers to recognize them. Reader identifications of characters under these conditions mostly were wrong. However, the erroneous character named was more often one that appears very frequently in reading and less often one that occurs more rarely. The rule seems to be, when in doubt about what you see, you have a better chance of being correct if you name a character that appears quite frequently.

Other more complex cues than simple frequency of character occurence are available to the tactual reader. The relative probability of one letter following another can be a cue.

For instance, whenever we encounter the letter"q", the chances are extremely great that the next letter we see will be "u". Experience with the frequency of occurence of sets of letters can provide cues for word recognition. The occurence of prefixes and common stems in the English language restricts the possibilities of certain letters or letter combinations following. Therefore as more letters of a word are encountered, the probability for correctly guessing the word is increased.

The context in which a word occurs provides many cues as to its meaning. In our studies, we have found that placing a familiar word within a meaningful context reduces the amount of time required for its recognition. While this effect does not occur for words of three characters, it is apparent in the case of five character words and pronounced in the case of seven character words. Under the conditions of our studies, it was interesting to observe that while context helped in the recognition of familiar words, it interfered with the recognition of unfamiliar words. In the case of the latter, it appears that skilled readers, relying habitually on cues derived from preceeding context and information derived from sensing the initial parts of words tend to perceive the stimulus as a familiar word. Since in our experiments we have stacked the deck by changing the relative probability of occurence of familiar and unfamiliar words, their probabilistic perceptual model is no longer valid. This leads to a higher frequency of erroneous perceptions for unfamiliar words.

It was mentioned earlier that our high school subjects were selected from the upper and lower thirds of the distribution for reading speeds in such a manner that both groups have equal and high amounts of comprehension. We have named these groups fast and slow readers. When compared, fast and slow groups selected in this manner are equivalent in age, grade level and distribution of sexes. They do not differ on measures of tactual discriminatory ability. Groups selected in this fashion do differ in IQ, the mean for the fast groups being about 120 and that for the slow groups being about 100.

When the reading behavior of these groups is compared, the following appears. Estimated mean reading speed for fast groups is about 130 wpm and about 65 wpm for slow groups. It takes about twice as long for the slow readers to recognize individual braille characters as it does for fast readers. Word recognition times are from 60-100% greater for slow readers. While the dynamics of the braille reading process appear the same for the two groups, increases along any of the word dimensions studied (length, familiarity, contracted-uncontracted) results in a disproportionate increase in word recognition times for the slow groups. Context helps less in recognizing familiar words and hinders recognition of unfamiliar words to a much greater degree for slow readers as compared to fast. Slow readers recognize many fewer words before all the characters are sensed than do fast readers.

Although the descriptive data for the groups are meagre, the fact that IQ is the sole measure on which they differ stimulates this kind of speculation. The groups are equal in comprehension but vastly different in rate. Rate of braille reading may therefore be highly related to the intelligence of the reader. If the braille character is assumed to be the perceptual unit in reading, then the associative integrative burden of the braille reading process can be assumed to be far greater than that for print. If this is the case, a higher minimum intelligence may be required to learn to read the braille system or to develop a degree of skill to read it with any facility than has generally been assumed.

The results of our research to date provide literally dozens of directions for additional research in the area of tactual reading. We are reaching the point where implications for reading instruction are becoming apparent.

IDENTIFICATION OF ORIENTATION AND MOBILITY SKILLS FOR YOUNG BLIND CHILDREN

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Orientation and mobility for the blind is a relatively new discipline. The systematic use of basic techniques, i.e., hand and arm techniques and the use of a long, light, functional cane as a mode of travel began during World War 11. However, it is well to remember that the techniques have been validated empirically with more than a thousand blinded adults. In recent years, these techniques have also been used successfully with blind youth at the secondary school level. Now, there is a great interest in developing orientation and mobility for young children.

This increasing widespread interest in the application of this discipline to young blind children has resulted from many factors: (a) the implications of recent studies concerned with the similarity of developmental characteristics of blind children and sighted children[1]; (b) the important role of physical independence in feelings of self-worth and social interactions; (c) the early efforts of training centers, such as those at San Francisco State College and the University of Minnesota, to offer workshops in orientation and mobility for classroom teachers of the blind and (d) the impact of the numbers of congenitally blind from the "retrolental fibroplasia bulge" to the elementary schools.

Current practice in education implies that both sighted persons and blind persons have common basic needs and developmental tasks to be satisfied. The difference between the blind and the sighted, however, lies in the manner in which each relates to and gains information about his surroundings and thereby orients himself.

The more meaningful the basic orientation to the environment, in terms of training, variety and quality of experience, the better will be the total development of the individual and his command of his environment.

A Planning Study was conducted at California State College at Los Angeles under a grant from the Vocational Rehabilitation Administration, Department of Health, Education and Welfare.[2] It was designed to survey the current needs for orientation and mobility instruction for blind youth in Los Angeles County during June 1964 to July 1, 1965. The population selected for this study consisted of 280 braille students enrolled in public schools of Los Angeles County.

Each subject met the definition of "legally blind," used braille as a communications tool, and was enrolled in one of the grades, kindergarten through twelve. Their ages ranged from five to twenty years.

Certain findings of this Study have important implications for our topic today: (1) one-half of the subjects are diagnosed as retrolental fibroplasia; (2) almost three-fourths of the subjects are congenitally blind or had lost sight prior to age five; (3) as the age of the blind youngster increases, he becomes less able to cope with the relatively more complex daily demands of independent functioning; (4) an analysis of the parents' opinions relating to the orientation and mobility skills and needs of their children indicates that many age groups lack important basic understandings, i.e. street numbering systems, compass points (N, S, E, W) and basic directions.

Therefore, one recommendation of the Study was that appropriate orientation and mobility experiences for pre-school and elementary-school age children be investigated.

An application to undertake research with young blind children was submitted to the U.S. Office of Education. The grant[3] was awarded and became effective June 15, 1965. Dr. F. E. Lord is Principal Investigator and Miss Clarice Manshardt is Research Consultant.

The primary purpose of this initial project was to develop an inventory of orientation and mobility skills and related concepts for blind children, ages two through twelve, together with a behavioral or sequential description of different levels of performance within each major skill. This inventory is intended to be a guide to pre-school workers and to teachers of young blind children in describing and evaluating progress in these skills and concepts.

The ordering of the inventory is to be linked to typical developmental patters of growth. Specifically, Havighurst's theory of developmental tasks provided a helpful guide for patterning sequential behavior in this area of living. Havighurst's description of a developmental task follows:

> ...a task which arises at or about a certain period in the life of an individual, successful achievement of which leads to his happiness and success with later tasks, while failure leads to unhappiness in the individual, disapproval by society and difficulty with later tasks[4]...

The developmental studies typified by Gesell[5] also provided a model for sequencing the inventory.

Havighurst's definition led to the major assumptions of the project. These assumptions are: (l) that the growth of a blind child would approximate that of normal children when the former are given the full benefit of appropriate experiences and training; (2) that appropriate orientation and mobility instruction must be a part of younger blind children's experiences; (3) that the pattern of developmental tasks for blind children is, to a significant degree, comparable to that of seeing children; (4) that orientation and mobility techniques provide the skills and experiences for the blind child which will allow and facilitate accomplishment of his developmental tasks.

The procedures utilized the past year have been, initially, to arrive at a master list of orientation and mobility skills related to normal developmental patterns. To do so, the following steps were undertaken: (l) The literature describing orientation and mobility skills was reviewed and a list of skills were compiled. (2) The literature relating to developmental patters in locomotion, living skills, spatial concepts and sensory awareness for all children was analyzed and linked to the basic list of orientation and mobility skills.

For example, for children ages five to six in the area of physical environment, the developmental referent is, "explores materials tactually: touches - handles." The orientation and mobility skills and related learnings for blind children are: "uses tactual clues to identify major features of a room: door, windows, cabinets." In the area of corridors and playgrounds the developmental referent is, "able to follow simple route." The orientation and mobility skills and related learnings for blind children are: "trailing technique, initially used to establish familiarity with corridors." "Simple landmarks utilized." "Use of sounds, temperature changes, air currents as cues." "Understands terms such as 'bumpy,' 'smooth,' 'narrow,' 'wide.'" "Counts doors."

The compilation of the master list of developmental data and orientation and mobility skills provided a major basis for development of items for approximately sixty sub-scales designed to evaluate the performance of blind children in this general area of orientation and mobility.

Six experienced elementary school teachers of blind children also added behavior descriptions to the pool of possible items. By working under a system of planned observations of blind children, the staff, with the help of special consultants, refined the sub-scales which were submitted to three juries: a group of teachers of blind children, a group of orientation and mobility specialists and a group of child developmental specialists. The juries were requested to order each sub-scale sequentially from the easiest to the most complex components of a skill and to rate the significance of the sub-scale to the inventory as a whole.

The sub-scales have been revised in the light of the jury and staff evaluations, and a first experimental edition of the scale has been used in a field trial. At least one child at each age level from two through twelve was evaluated. Statistical analysis of this first trial is in progress.

The final edition of the instrument will include approximately 40 sub-scales each of which has three or more items. An example of a typical sub-scale is as follows:

FOLLOWING INSTRUCTIONS WITH RESPECT TO TURNS
UNDERSTANDING TURNS

___Turns around upon request to face opposite direction.	i.e. Approximates 180°- half turn
___Turns quarter turn upon request.	i.e. Approximates 90°-square corner
___Makes complete turn in place.	i.e. Approximates 360°-full turn
___Turns to establish diagonal line of travel.	e.g. Approximates 45°- one corner to opposite corner
___Turns above given angles stated in terms of degrees.	e.g. Approximates commonly used angles, 180°, 360°, 90°, 45°

USING DIFFERENCES IN ELEVATION

___Verbalizes about definite changes in in elevation.	e.g. Ramps, slanting driveways
___Verbalizes an awareness of gradual slopes.	e.g. Slight rise in pavement; incline to garage
___Uses elevation as cue and/or landmark.	e.g. Slanting driveway apron

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USING SIGHTED GUIDE

___Holds hand of sighted adult guide	
___Grasps sighted guide's arm	e.g. Thumb just above elbow, fingers on body side.
___Walks with guide under normal conditions.	e.g. Walks to side and one half pace behind guide.
___Uses positional cues and movement of sighted guide in crowded areas and on steps.	e.g. In crowded area or narrow passage he extends arm and moves directly behind guide when sighted guide pushes his own elbow toward center of his own back. Stays one tread behind on ascending and descending stairs.

___Assists in opening and closing doors.	e.g. Drops one pace behind when guide opens door. If the open door is on his side, he holds it open for both to pass through. If door is on guide's side, he momentarily grasps guide's arm with his opposite hand and extends his other arm so that he may hold the door open with the other hand. If door is not self-closing, blind person closes it.
___Maintains own alertness and orientation.	e.g. Knows in which direction he is traveling.
___Directs sighted guide when necessary.	e.g. Familiar route to a destination.
___Instructs companions in sighted guide techniques.	

The field trial has provided helpful material for the next steps of the project. These steps include: (1) Preparation of a professional manual of instruction which will define terms used and otherwise assist users in making objective evaluations of children under comparable conditions. (2) Administration of the instrument to a representative sample of blind children to verify the usefulness of each sub-scale and the proper sequencing of items within each sub-scale. (3) Evaluation of the effectiveness of the diagnostic value of the inventory. (4) Submitting a demonstration proposal that would experimentally test a systematic curriculum of orientation and mobility for young blind children accompanied by illustrative lesson plans and guides.

I should re-emphasize that the purpose of the instrument being developed in the present phase of this research project, is to define and validate a series of scales which will serve to guide teachers of the blind and professional workers of the blind in selecting appropriate experiences for children with whom they work.

It is hoped that a well-illustrated teacher's guide to orientation and mobility for blind children will be a supplement to the inventory.

The supplement and the inventory then can provide for beginning a program for children where they are and later checking mastery and needed teaching as the systematic program progresses.

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[1] Arnold Gesell, Vision: Its Development in Infant and Child (New York: Paul B. Hoeber, Inc., 1950).

Miriam Norris, Blindness in Children (Chicago: University of Chicago Press, 1957).

[2]"A Planning Study for Orientation and Mobility Instruction in the Schools of Los Angeles County", Project Summary: Vocational Rehabilitation Administration Project RD-1406-S.

[3]"Identification of Orientation and Mobility Skills Relating to Developmental Tasks for Young Blind Children": Office of Educational Research. No. 5-0980-4-11-3.

[4]Robert J. Havighurst, Developmental Tasks and Education.(New York: David McKay Company, Inc., 1952) p. 2.

[5]Arnold Gesell, Frances L. Ilg, et al., Infant and Child in the Culture of Today. (New York: Harper and Row, 1956).
Arnold Gesell, Frances L. Ilg, et al., The Child from Five to Ten. (New York: Harper and Row, 1956).
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ORIENTATION FOR JUNIOR AND SENIOR HIGH SCHOOL STUDENTS

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"My child is blind and because he is blind I will be his eyes. I will keep him close and protected but who will do this when I am gone? No, rather than protecting him and sheltering him I will teach him to be independent so that he will not be a burden to the world but a living, contributing part of it."

What you have just heard was an introduction from a radio program preceding a series on counseling for the blind. It struck me with its drama and insight, all summed up in a few short sentences. Just like this story's beginning, it wasn't long ago when our whole society thought in terms of sheltering, protecting, and even hiding the blind. Many institutions were devoted to this idea and many parents followed this example.

Today we like to think that our ideas are vastly changed - and they are. We are thinking in terms of fulfillment. We know that blindness imposes certain restrictions and we are finding ways in which to compensate or overcome them. For instance, we know that the loss of mobility is a terrific loss to any person, however we know that research and demonstration projects are ways and means for gaining additional information. For this we are very thankful.

The Vocational Rehabilitation Administration has supported a demonstration project for providing orientation and mobility training for blind Junior and Senior high school students for the last four years with the Catholic Charities Department of Vision and Hearing. Its primary purpose is to fill a void where there has been no orientation and mobility training. Other purposes are: (1) to actively assist these children to gain mobility and independence; (2) to determine the frequency of instruction that would be most effective for children; (3) to determine the factors which are related to orientation and mobility success; (4) to note the effect of training upon the child's academic and social activities; (5) to note the effect such training has upon enlarging the child's physical environment and (6) to note if the addition of mobility training has enabled him to better control his environment.

Our objectives have been to utilize the orientation and mobility techniques in use at the Veterans Administration Hospital, Hines, Illinois and make them more effective for children. This program has been applied to the Catholic Charities Program for the Blind in Chicago under the direction of Miss Marian Quinn, Director of the Department of Vision and Hearing Services. In the four years that this program has been in effect, 43 students have received training. A resource room provides the additional setting for the fourth through sixth grades. An itinerant program services the seventh and eighth grade students and also the Senior high school students.

Sequential lesson plans are contained within five units which progress from skills basic to all orientation and mobility:

1. The use of basic hand and arm protection, the use of a sighted guide and all techniques that would be considered pre-cane techniques.

2. Indoor cane travel with the use of the cane; e.g., travel within the school environment to locate various objectives within the building.

3. Residential cane travel, e.g., moving further away from the school environment to include the residential area surrounding the school.

4. Business travel, e.g., moving along busy streets, utilizing public transportation and in effect, traveling within an area that is very complex.

5. A unit consisting of special instruction or student evaluation. This unit would provide for any special needs that the student may encounter after regular courses of instruction have been completed. If no special instructions are requested, periodic checks would be made to determine how well a student is doing after completion of regular instructions.

While our results are not yet statistically conclusive on all the phases of this demonstration, the following represent results or trends:

1. Mobility skills as practiced by the Center for Blind and Visually Impaired Veterans, Veterans Administration Hospital, Hines, Illinois, are extremely effective for children. Only a few minor revisions have been noted. However, there is a greater need for orientation procedures with children than there are with adults. We know that there is a distinct difference between an adult who has lost his sight after many years of seeing than there is with a child who has been congentially blind. We need to provide the child with a background of information for best results.

2. The frequency of instruction plays an important part in the eventual success of an orientation and mobility program. Indications point to a minimum of instructions for the average student to approximate at least three period per week of 30 to 40 minute durations. The ideal situation would be a five day per week schedule of the same duration for each lesson.

We have noticed that the children who have received training which has most closely approximated the ideal training situation have been the most successful students.

3. Success in training relates positively to the factors of: intelligence, the amount of residual vision available, the recency of visual loss, the parental attitudes toward independence, the child's ability to take on responsibility and chores, and travel objectives. Goals which are useful and practical to the child can be utilized as powerful factors.

4. In relation to social and academic activities we find that social activities are increased for many students, as he gains in his ability to be independent to come and go as he pleases. Academic activity is insignificantly affected even though the orientation and mobility program has been superimposed upon the regular educational curriculum. From a random sample the mean indicated a positive gain of one point using a grading scale of 0 to 100 points. A noteworthy point which has evolved is the fact that even though social activities may be increased the academic scores remain stable.

5. The enlargement of travel range is definitely increased for the students receiving training. During a particular six month period of time, a student's increase in range of travel may extend from a low of travel within his school and very immediate neighborhood, to a high of travel within a much greater area both by foot and public transportation.

The normal extension of travel more closely approximates safe, efficient and effective travel within the school, training area and home area, primarily residential in nature, and within a radius of approximately one-half mile in every direction.

Additional travel training will advance the student to the more complex situation of travel when his needs become greater.

6. Control of environment is decidedly better. Orientation training provides a frame of reference, sensory training heightens awareness, and mobility training provides an efficient mode of travel.

One girl, Frances and no longer a child, participated on the program at the start. She has since been independently mobile within her integrated high school traveling to and from with the use of foot travel and public transportation. She now attends a Chicago College and continues to be mobile in her latest situation. She is capable and able to travel within the City of Chicago so that her various needs and interests may be met. A boy, Richard, having the same background is currently enrolled at the University of Illinois at Champaign. He travels so efficiently over the campus that he has been examplified as a "model" traveler. Our pride in these graduates of the orientation and mobility program is almost unbounded.

The implications of this project lie not in the recognition that this has been an unusual or a distinct educational experience for some of our blind children - rather, that existing programs for the blind need to include orientation and mobility training within their curriculum in order to have a "complete" program which meets the need of every blind child TO BE INDEPENDENT!

THE CHILD WITH LIMITED BUT USEFUL VISION

A PERSPECTIVE

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As I have listened the past two days to the very challenging and informative sessions bringing to our attention exciting new knowledge from the research in the area of reading - a skill so vital to the total learning process - then to the fine progress we have made in understanding the many related variables pertinent to the means of helping children expand their world and their learning opportunities, I have thought: Surely we are living in an era filled with tremendous innovations to enhance our abilities to provide optimal learning opportunities for visually handicapped children.

The above topic is but another example in which new ideas, new research projects, and improved teaching methodologies are being developed. First of all, let me attempt to establish a communicative basis for the discussion. Whom are we talking about and what are the visual characteristics of children with "limited but useful vision"? The medical or legal measurements of acuity are of little concern - they do not tell how much or how little a child can use his vision for learning. We may be talking about the child who has little more acuity than light perception, or we may be talking about the child who has considerably more than a measured acuity of 20/200. We are talking about children who have not developed their visual abilities to the fullest extent, or indeed may never have learned how to see. The basic question is: how can we best help each child achieve optimal use of his limited vision to enhance, supplement, or provide the maximum learning through his limited vision?

Only in recent years have teachers of visually limited children become cognizant of bodies of knowlege gained through research in the interrelated areas of medicine, psychology, and education from which can be developed a valid theoretical rationale for meaningful experimentation and research with children with limited vision. To highlight only a few of the studies, first let us look at medical research. From this discipline we have:

1. Evidence that seeing is not an instantaneous phenomenon but a gradually developing process physiologically - learning to fixate on a selected visual stimulus until a stable image is perceived and recognized.

2. Evidence from long term studies that children considered blind at birth were found to have varying levels of useful vision in later childhood and adolescence despite the fact that no planned learning experiences had assisted them in developing visual abilities.

Secondly, from psychological studies, knowledge shows:

1. That the ability to see is primarily a function of the brain - not the eye itself.

2. That the ability to perceive visual images can be accomplished even when there are severe impairments in the visual mechanism.

3. That the ability to perceive images visually can be a learned developmental skill, and can be taught to the majority of children who have residual vision. Learning theory tells us that all developmental learning follows a sequence from that of form perception, to outline shapes, to discrimination of specific forms and outlines, and finally to that of actual recognition of objects or images to which a name or label can be attached. Only then has one learned to see.

Thirdly, from educational surveys and research we know:

1. That children once thought to be "blind" for educational learning, and who acquired information only through braille or other tactual means were becoming print readers as they moved through educational experiences.

2. That many children with varying degrees of acuities from quite low measurements of 3/200 to 5/200 were using their vision for some or all of their academic work.

With basic evidence of this nature several research projects and experiments have been initiated to establish the validity of a planned program of visual stimulation for children with low vision. These studies have yielded highly significant statistical findings which are indeed encouraging, and suggest the need for more studies as well as the implementation of developmental visual learning programs in classrooms.

Implications

In the future, greater attention should be directed to:

1. Children with limited vision during their preschool years. Constant focus on visual experiences, assistance in verbal interpretation of what the child is seeing, and psychological encouragement and motivation to attempt to stabilize blurred images will prepare young children for sequentially planned educational learnings through use of limited vision.

2. Carefully designed research to establish the feasibility of concentrated visual development programs for all children with any degree of visual ability prior to the introduction of braille symbology as the reading medium.

3. The validity of more carefully planned readiness programs for children with "borderline" vision whose learning potential may be in question due to lack of enriching experiences or to average or below intellectual functioning. Recent research suggests that a much higher level of cognitive organization is required for effective speed and comprehension of braille symbols than for print symbols. Perhaps the majority of low vision children should have the opportunity of concentrated developmental stimulation programs of learning readiness of an exploratory nature.

4. Research on the use of optical aids in conjunction with developmental teaching is totally lacking. Educators and vision specialists should collaborate on well-designed research of this nature with all school-age youth, but especially for children in the early school years.

A new day is dawning for children with limited but useful vision, but the light will not shine brightly without the interest, concern, and cooperative planning and communication of medical, optical, psychological, and educational specialists in well designed research.

GUIDES FOR TEACHERS IN WORKING WITH VISUALLY LIMITED CHILDREN

Miss Cornelia Benton

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Whether you work in a self-contained classroom, have a resource room, or operate on an itinerant basis, you are familiar with the problems that confront the child with indefinite vision. He has indefinite vision only because we are not able to define it and he is not able to communicate adequately about it himself.

It seems to me a child is partially sighted if he has any usable vision. I like the statement in Dr. Barraga's study[1] that says, "In the case of children, the concern should be with visual efficiency and not visual acuity." The ophthalmologist's report is important and gives us some clues also as to what kinds of problems we may encounter because the child has a specific anomoly. However, there is much more that a teacher must explore on her own if she is to discover this "visual efficiency". This, therefore becomes one of the first tasks to which she assigns herself.

There is much evidence to indicate that the visually impaired child needs to be taught to see. I believe this is true of a child born with all of his perceptual apparatus. If this is true how much more it must apply to the child with whom we are now concerned. If we are going to teach this child to make better use of the vision he has, we need to know where to begin; therefore we observe him in as many situations as possible. In addition to observing him in the classroom, on the playground etc. we initiate, purposefully, many kinds of activities that help to give us clues as to how he is operating.

This past year I borrowed quite heavily from Katie Sibert's Criteria for Determing Usable Vision of Visually Handicapped Children[2] for use with a low visioned student just beginning first grade. Some of these activities were: working with colored blocks; sorting such things as cars, buttons, spools, beads etc. according to size and shape and color; finding pairs just alike, opposite etc.; studying pictures and talking about them, picking out big things, small things, something green, something alive etc. She suggests taking the child for a walk around the playground and talking about what is seen, noting very carefully such things as, how far away can he see a car coming or identify playground equipment, trees and the like. Whatever is done should be recorded in some form. If careful records are kept over a period of time usually a pattern begins to emerge that gives a reasonably valid basis upon which to plan a program of learning to meet his needs. This is not to say that we put him in a neat little compartment and say, "this is it," for we know that we have to evaluate continually. The regular classroom teacher should be asked to share in this assessment for if she knows some of the things to look for she may be able to make some very valuable observations of his visual functioning. This is true also for the parents. Thus you establish a working team of detectives, so to speak, with the hope that the child will benefit.

After this inventory of visual skills has been taken, much of the information may be used for actual teaching purposes, helping the child to recognize likenesses and differences, discriminating in many ways, learning such concepts as big and little, up and down, over, under. We can teach him to pick up clues of his own and watch for new things that he has not seen before. Most of all we must motivate. Make it an exciting game, this business of seeing!

In addition to this important need to see better is the child's need to be accepted socially, to become more responsible and independent. Research has pretty well shown that these students do not do too well socially. It has been my observation that this social adjustment is very closely related to self acceptance, for a child who accepts himself as of not much worth is the one the others shun. So we begin by building on his strengths, helping him to succeed and even excel perhaps, in some areas so that others will begin to look at him with respect. Close cooperative effort between the special and regular classroom teacher as well as the parent is necessary to bring this about. This boy or girl needs to learn how to take responsibility for himself and make adjustment himself for his own needs. It becomes very easy for these children to lean on the special teacher or to wait for the classroom teacher to take care of his needs. He must be taught.

I have a little girl who was first assigned to me in the second grade. One of her big problems was that she waited for the teacher to tell her to go up close to the chalk board to copy her arithmetic. If the teacher failed to do it she would start to cry. She was in the fifth grade this past year and one of the most independent of all my students. She had to be helped to see that it was her responsibility to look after herself and the more she did it herself the less conspicuous she became in the class.

This area of responsibility carries over into planning for academic help. At first these children have a very difficult time evaluating their weaknesses to the point where they can even tell you what they are. It takes a lot of training sometimes to get them to the point where they will actually ask for help. I heard an itinerant teacher say once that she would go to the classroom door, call the child out, and ask him how he was getting along. If he thought everything was all right she went on her way again. I must confess I was a bit shocked for I know that it takes more than a few minutes at the door to find out how Johnny is doing. I find too, that you can't just say, "How are you getting along?" because the answer is almost invariably, "Fine," or, "I don't know." You really have to get down to cases. Better it is to say, "Did you get your arithmetic finished today?" or "How many spelling words did you get right this week?" or to the high school student, "How far along are you with your science project?" "Is your history outline complete?"

Once they know you are checking on them, that you are keeping close enough account of what they are doing to ask specific questions, they often will take more pride in doing their assignments. The teacher will try to alert you to a test coming up but it is good to hold the student responsible for letting you know when he is going to need to have his test brailled or done in large print. There is no reason why a fourth grader cannot notify you a few days ahead when she knows she is going to need a new reading book. Even the first grader can be trained to let his special teacher know that next Tuesday his class is going to the zoo so that he won't be in the resource room that day.

Most of the good we can accomplish with the child depends upon our rapport with the classroom teacher and how well we communicate with her. She needs to know what our role is and what her responsibility is in making this service a success. An early conference with the teacher is a must and this one should be of sufficient length to make reasonably sure he or she understands something of the child's problem, what adjustments need to be made and how we work together to bring this about. In our program we try to accomplish this by not later than the third week of school or as early as possible in the case of a child assigned later in the year. If the problems are severe I drop by even sooner than this to let the teacher know that help is on the way. Then we need to check back often to make sure the teacher has understood the message. To those who are situated in a resource room this is not so much of a problem, except perhaps with a new person in the building, because the faculty is already oriented to the program.

We should check often on the child's progress. I would like to emphasize here that we should take as little of the teacher's time as possible but make each visit count for something. Try to make the teacher feel good about having this child in her class. Be specific in the questions asked. We don't just say, "How is he doing?" Rather ask such questions as, "Is he completing his arithmetic assignments? Does he turn in his home assignments on time? How did he get along with his report on South America? Would you like me to help him with his handwriting?" Be completely supportive and as available as possible when the teacher asks for a conference. We should make it easy for the teacher to get in touch with us. The teacher also needs to be kept informed of the educational implications of any new findings we have made, as the year progresses.

Researchers have found that the areas involving visual-motor coordination almost always cause problems so we need to be alert to these needs. I believe it is imperative that the teacher be able to do diagnostic testing and teaching. Problems can be eliminated early, or better still, avoided entirely if a thorough program of this type is carried out. If the special teacher, for example, keeps in such close touch with the classroom teacher that she knows when new arithmetic concepts are being taught she can follow up with reenforcement and clarification. Partially seeing students come to rely heavily on auditory clues and I find quite often miss such simple mechanics as where to place the second row of numbers in a two-digit multiplication problem. This applies readily also to handwriting skills where close observance of a chalkboard demonstration is almost impossible. Reading difficulties arise for the same reason, especially in the early stages of learning.

And so it seems to me that difficulties develop not so much from the lack of visual acuity per se but from the lack of special help in adjusting to this lack. We should therefore keep doing more to help the children in our programs and work hard to find other students who are not receiving the necessary help.

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[1] Natalie Barraga, Increased Visual Behavior in Low Vision Children, American Foundation for the Blind, Monograph No. 13.

[2] Katie N. Sibert, Criteria for Determining Usable Vision of Visually Handicapped Children, for use in Stanislaus County Schools (California).

FINDINGS AND IMPLICATIONS OF EXPERIMENTAL TEACHING IN VISUAL STIMULATION

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There are many children called "blind" who have some vision, even just a little, which can be used to varying degrees of effectiveness. Practical use of such vision is not something, generally, which simply happens. Rather, we now know that children possessing residual vision need definite guidance and education in its best usage. When we once learned that most such youngsters not only suffered no ill results through using the visual capacities they had, but would suffer instead by not employing them, the way was cleared for beginning concerted efforts to spread this urgent, vital "gospel"

In 1963 a study, with this goal in mind, was conducted at George Peabody College by Dr. Natalie Barraga. One aspect of this study was the publication of Increased Visual Behavior in Low Vision Children by the American Foundation for the Blind in the following year. As a result of the program undertaken, it was apparent that even a short-term teaching effort could significantly improve the visual efficiency of young, low-vision children: subsequent assessment revealed that proficiency was maintained over a long period.

Because of the acknowledged importance of this whole area and the recurring expressed need for further research, a replication was undertaken at George Peabody College, within the domain of the Special Education Department and by means of funds supplied through the United States Office of Education. Answers were sought to the questions: Could results comparable to the earlier ones be achieved with other children? Could other investigators obtain comparable results using the same experimental teaching approach as was devised by Dr. Barraga? Could data be obtained to further validate and determine the reliability of the Visual Discrimination Test designed by Dr. Barraga specifically for the original study.

At this point please permit a diversion to, and emphasis on, certain key factors which bear repetition. First, the purpose in teaching children to use their remaining vision more efficiently will vary with each youngster. The overall goal is to help the individual extend his visual ability, not to teach a youngster, necessarily, to read print. For some children this may mean to enable them to distinguish colors; for other, to recognize forms - for still others, to read the printed word. Second, *every* teacher of visually impaired children can contribute to these individualized goals and, indeed, *needs* to stimulate a child to his best visual performance. Third, the materials by which this can be done can be quite simple in nature so long as they take the child where he is and lead him on, in progressive steps, to what seems to be maximum visual use. Fourth, the earlier such education begins, the better.

Now, let us return to the Peabody replication study, look at it in terms of those involved and of its results, and consider especially the reactions of the teachers as related to the overall program. From the schools for blind children in Kentucky, Tennessee and Virginia, 24 youngsters were included in the experimental group. A control group was constituted of 17 children from the Arkansas, Illinois and Texas schools. The subjects were selected by the following criteria:

Ages 6-13;
Grades 1st-5th;
IQ - 70+ (as measured where possible within the last 2 years
by IHB Intelligence Test or the WISC verbal scale only);
Instructed as braille readers from first to present grade placement;
Instructed in the classroom with other than visual materials;
Judged ophthalmologically as having not less than "object perception"
(or "counts fingers" ability to "light perception") up to
no greater than 8/200 vision in the better eye, corrected,
with the impairment resulting from conditions present at
birth and with a prognosis of no improvement;
Free from other known impairments which might present additional
problems for learning.

A comment here would be appropriate as to the positive response given to the request to the participating schools that they involve themselves in the replication study. Not only does it indicate their awareness of the need for further research in this area - it also gives evidence to the interested cooperation of our colleagues when they are approached regarding such meaningful efforts. It is therefore with a warm and sincere appreciation to the personnel of these schools, as well as to Dr. Barraga for her constant helpful interest, that this report is given.

It should be noted that there were certain departures in the replication from the original study: 1. IQ limit was lowered from 80 to 70 because it was felt that this measurement was not too exact, in any case, and that children in this lesser range could very well benefit greatly from participation in such a program; 2. the visual acuity limit was extended from 6/200 to 8/200; 3. negro children were included as subjects, along with white youngsters. These departures were considered as positive factors allowing for broader, enriched findings.

The replication program began and ended as did the original, with the administering of the Vision Discrimination Test to every child participating and with the obtaining of distance and near vision acuity measures for each. In most cases, these were ophthalmologically done. The VDT was especially devised in the original study as a measure for determining and evaluating children's visual prowess through noting their recognition of forms, pictures, inner details, letters and words in order of increasing difficulty.

Now let us turn our attention to the teachers in the experimental program. In two cases, these were members of their school's faculties; in two schools, teachers were recruited from other sources. In all instances, selection was based on: the teachers' interest in and understanding of children and the program; their familiarity with readiness materials and their use with pre-print reading children; their enthusiasm for and vital philosophy of teaching. In three cases, the teachers were personally oriented to the program and trained regarding lesson plans, instruction, materials and record keeping by a research assistant who had been involved in the original study. The fourth teacher had also been involved in the earlier program and was especially suited to her role by this and her other qualifications.

The programs carried out by each teacher with her group of children varied in specifics but revolved around the basic tenets mentioned: approximately eight school weeks were spanned; daily lesson periods ranged from 30 to 45 minutes and involved two (or occasionally three) children at a time, although some single-child sessions were held as was necessary; the 44 lesson plans of the original study were used as the general working framework; these lessons began by leading the children from tactual to visual recognition of tangible objects, then to recognition of outlines, inner details, observations of likenesses and differences and, ultimately, into the recognition of letters and words. The teachers were urged to follow the developmental approach of these lessons with care although they were urged also to use discretion in supplementing or departing from the lessons as was deemed appropriate. The pre-test VDT scores of the children were not given to their teachers prior to instruction because the approach was not one of remediation of specific problems but rather was general in nature. Instructional sessions took place during the school day and were scheduled at the optimum time possible from the standpoint of the children's schedules and the availability of the instructor. Throughout the instructional sessions emphasis was placed on the kind of rapport between children and teacher which would urge maximum interest and effort from the youngsters. Care was taken to afford a good physical situation, in terms of lighting and comfort. The teachers constantly evaluated and recorded the progress of each child and gave attention, as well, to the practicability of the lesson plans and the materials used.

Inasmuch as the materials used in the original study - the puzzles, forms, pictures, etc. - had been made by the investigator, it was necessary in the replication process to develop and obtain materials which were as closely akin to the prior ones as was possible. This was done in consultation with Dr. Barraga, through purchasing appropriate readiness supples from various commercial sources. Teachers were urged to add to these purchased kits, with which each was furnished, through making their own appropriate supplementary materials.

We will next consider the results of the replication study. It should be noted that the VDT post-test scores of the experimental group were significantly higher than their pre-test scores. Therefore, significant gains in visual functioning as measured by this test resulted from the replication study, as was true of the original study. Inasmuch as other investigators were involved in the replication study, it is thus apparent that positive results could be obtained by different persons using the same experimental teaching approach as was originally employed. Additional information was also provided regarding the reliability of the VDT. The test-retest coefficients of correlation were 68.5 for the experimental group and 98.5 for the control group. A complete report of the study was given to the United States Office of Education.

Now let us turn our attention to the reactions from the participating teachers - their comments and observations which can serve as guidelines for our thinking and programming regarding children called "blind" but who have remaining vision which can be utilized with increased effectiveness.

The overall reactions of the teachers included the following:

1. All children completed the programs with increased confidence in their ability to use their vision for learning.

2. The response of the children and the progress they made call for a continuing program of this nature.

3. The program was terminated just as some children were approaching consistent interest and progress, reaffirming that individual factors influence the rate, direction and degree of learning to use one's remaining vision effectively.

As each program ended, the teacher involved was asked for a written summary of each child's progress. A glance at these summaries reveals such excerpts of statements as these:

1. One little girl really had very little usable vision. At the beginning she used her hands constantly and made little or no attempt to use her eyes. By the end of the program, her hands were still, and she was trying to see the material. Her vision is rather specialized. She has excellent color perception; she was able to recognize letters of 1" to 2" in height made with a marking pen but could not see letters made with a narrower line. She progressed to the point of being certain of the things she could see, and hence no

longer felt the need to guess aimlessly at everything.

2. A six-year old was better in communicating what she saw with understanding. Her least improvement was in reading of words. However, she recognized the likenesses of letters and words, and further teaching might enhance her efficiency.

3. One child did not improve visually to any great extent. She improved tactually and had a better concept of materials from hearing them discussed, and handling them, than some of the others. Visually she fluctuated. She could discern smaller objects better than she could larger ones.

4. On boy did well in all the lessons until print letters and words were introduced. He was convinced he could not read print and said it was difficult to see the material, although when asked to discriminate like and unlike letters and words he was able to do so. During the last weeks he became more reserved during the lessons. It seemed that he could have resented the fact that his partner was reading.

5. It was necessary for another child to hold all material against her eye. At the end of the lessons it was noted that she could work better with the material against a wall. She was reading words and sentences at the close of our program.

6. A remarkable little boy seemed to want to absorb everything he could in the short time he had. By the close of the program he was reading at primer level.

7. Another boy was a complainer from the start of the program. He repeatedly voiced his fear of being forced to "read print". This fear did not leave him until near the close of the program when he realized that he could see pictures and that the shapes he had been seeing recently were, in fact, large print letters. In the first weeks, he functioned as a totally blind child. The command "look" had to be followed by the words "with your eyes". He guessed freely and admitted it. Consequently, great care had to be taken in phrasing questions. As he learned to trust his vision, he resorted to guessing only occasionally. By the end of the lessons, he was showing a definite interest in his ability to see simple pictures and large letters. He told his teacher, "I'm blind, but not very blind."

Perhaps it appears strange that comments which seem to be negative are interspersed with more positive ones! On second thought, however, one can see the many constructive implications which are found therein. We are reminded of the necessity to individualize the approach to each child, by which his needs can best be met. We see the importance of reaching him early, before he is set in his ways and has learned only to use his hands because his lesser visual ability has gone unnoticed and untaught. We are encouraged to value and utilize those kinds of motivation which will help the child to want to see what he can. We are reminded that programs of this kind can fail simply because a child's participation is scheduled at a time of day when he is less alert or has to miss another activity which he enjoys doing. We see the necessity for continuously and progressively stimulating a child's visual use, not to the point of frustration, not to th neglect of his efforts in other areas, but to the point of stimulating him, through tiny challenges of increasing difficulty, until he is making what seems to be good use of hi remaining vision.

In the case of one school, the classroom teachers of the experimental children were asked, some four months after the completion of the study, how the youngsters were functioning visually at that point. Comments ranged from noting "little observable change" to "names of colors and pictures of things are more meaningful;" "their interest in trying to see has picked up, but not to the point that the girls felt they were going to be print readers;" "the program is valuable, but care must be taken that children not be led to expect they can ultimately do more than they are able;" "the program should be more far-reaching; it should start earlier and should go farther."

Recommendations growing out of the replication study, in summary, made these points. They are a plea not only for the continued expansion of helping the children themselves to develop their visual powers as far as seems feasible but are an urgent cry, as well, for further meaningful research.

1. Attempts should be made to extend this kind of program from the youngest age levels, through reaching infants in their home-settings, to the older age levels as the child passes through his school years.

2. Other means and other instruments for evaluating progress in visual discriminatio need identification.

3. A program of this kind should be made applicable to children with additional handicaps.

4. The VDT should be further developed to extend its range.

5. Additional guidelines for curricula in this area should be developed; the lessons should be expanded, the materials supplemented, teaching procedures need further delineation.

6. Pilot programs should be developed integrating stimulation in visual discriminatio into curricula in programs for visually handicapped youngsters.

7. Research should be undertaken to develop diagnostic procedures for specific type of visual disabilities and to provide specific approaches to treatment in terms of thos diagnoses.

Implicit in the aforementioned lies the assumption that colleges and universities whic are responsible for training teachers of visually handicapped children must include i their programs preparation for ways of enabling teachers to educate children with remaining vision to its most effective use. It goes almost without saying that teachers of such children in integrated classes need to be informed, as well, in this vital educational aspect.

The beauty of this entire area of childhood education lies in its relative ease of incorporation into a given school's program. Teachers who are already sensitive to the individual needs and capacities of their children can provide many opportunities through the school day for a child to use his eyes in a practiced way. With the youngest children these opportunities need to be a formalized part of the curriculum, but it is time well spent when enriched learning is the result. As parents are helped to realize in constructive ways how their children's learning can take advantage of every sensory channel, even when only a remnant of one kind exists, each youngster's life experiences can thus be expanded. The challenge to each of us, as educators of children, lies in setting realistic goals in this area as in all areas and in meeting them through concerted, progressive efforts throughout the years of childhood. The result will be seen in individuals who can thus gain from, and give to, life in a more vital, meaningful way than would otherwise have been possible.

It has been said that research should lead to the enhanced well-being of the child as well as the adult. How can this help but be the case when educational areas such as this - the enabling of a child to use his powers to increased fulfillment - are recognized for their importance and are incorporated into the life experiences of every child who can profit thereby!

ADAPTATIONS OF MATERIALS FOR USE WITH LOW VISION CHILDREN

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What materials can I, as a teacher, use to help a child with limited but useful vision to discriminate, interpret, and understand that which he perceives? The individual child and his ability to use his vision must be the first consideration. However, we need to consider the budget when preparing our list of materials. There is a matter of storage space when the materials arrive. Consideration should also be given to the materials on hand or which can be borrowed for a short time. If the materials already available are not suitable, improvision by the teacher is very important. Materials used in a new way can make the teaching seem new. The student does not appreciate warmed left-overs in the classroom any more than you appreciate them on your table at mealtime.

This is an age of experimentation. Space talk and anticipated trips to the moon have become a part of our lives. Should this idea of experimentation not be carried into the classroom also? Perhaps an idea, a method or materials have been discovered or used somewhere else before. Perhaps part of it was borrowed, but if you have discovered it for your classroom, no matter what the age or area, then it is new. Children differ greatly, therefore teaching methods and materials should be flexible.

Recently I was involved with some experimental teaching closely paralleling Dr. Barraga's study and its replication. The subjects were of junior and senior high school level with near vision measurements from light perception and counting fingers, up to 20/300 in one eye. This problem of materials was necessarily one of the first considerations when becoming involved in a study such as this.

Light was the first and most basic material needed, light in addition to that which is considered adequate for work with low vision per se. A variety of lights including incandescent and indirect white light which provided spot-directed light were collected. These lights furnished well over 100 candle power and for the most part could be manipulated by the subject to meet the particular needs of a project. The Dazor Floating Fixture combination light and magnifier was in great demand. An adjustable type lamp such as the Tensor was also found to be good. There was an observed relationship between the amount of vision and the need for light.

The child should be allowed to experiment with the amount and adjustment of light. It is wise to remember that only the child sees through his eyes. For instance, one of the subjects worked very hard to alleviate shadows which hindered her ability to see. Adjustments made for her were often not correct. Had she not been able to make her own adjustments, she might not have been able to successfully accomplish her task. A slight shadow not noticeable to most, hampered her ability to see.

Adapting materials for learning sharper discrimination in height, length, geometric shape, letter, word, and picture present additional problems for solution. The inner core of paper towel or wrapping paper presents a gross form with which to work. These can be cut to various lengths and painted, offering the student training in both eye-hand coordination and discrimination. Reducing the size in the training material, the Montessori type wooden peg sets, or if these are not available, dowel rods from the lumber yard of different sizes and lengths would follow. In order to reduce size further, Cuisenair Rods developed for arithmetic primarily prove to be useful. Here again, color discrimination can be taught.

Figure study can begin with the geometric set from the American Printing House, geometric insets, and/or parquetry blocks. Of course, the "do it yourself" element is important and the actual reproduction of the figure itself proves useful.

This blends itself very nicely into basic letter and word study. Experimentation with various sizes of chalk on black boards proves helpful in making gross movements and distinguishing figure or letter. This knowledge and ability can be easily transferred to writing materials such as paper, pencils, felt tip pens, and crayons which might be used at a desk.

Letter and word study fall can be aided by the use of flash cards such as Dolch series or those from the Milton Bradley Company and others. Bulletin board letters of different sizes are good points of reference. Word puzzles and games add variety. Here one might find a variety of materials browsing in a book store, dime store, toy departments, or catalogs. Some items may need to be enlarged or darkened.

Picture discrimination can start in a developmental pattern from the gross with silhouettes, to single concept type. Posters such as those on "Manners" and "Safety," published by the F.A. Owen Company; simple pictures with little background and to those with more detail, both in the figure itself and in its background can be progressively used. Magazine and catalog pictures can be cut either for simplicity or to include more detail.

It takes a long time to collect a good useful library of materials. The needs of the child must be met at any level, however, and the enhancement of subject matter with various materials enriches the learning experience. If stimulated, the visual abilities grow as the child grows.

You say at this point, "I've tried many of these things in my classroom." I had also, but I found that time did not always permit the sequential pattern of development. This is essential. An initial learning situation followed by on-going enrichment in the classroom might present a workable solution.

There is no easy set method or list of materials that will always work, but there are established patterns and lists of materials which can be used as guidelines. Use your basic knowledge and imagination to experiment. Take any material from a carefully built stockpile and manipulate it to do the job you want it to do. Better yet, teach the child to manipulate it. Let the child help you to help him.

We need to be constantly looking around with an open mind and a desire to learn. Tomorrow may bring a new idea from the most unexpected place. It also brings with it rewards as it has to me. One morning one of the high school boys who had been in the experimental class for approximately two months came to me, hardly able to contain his excitement. He said, "Mrs. Holmes, do you think my vision could be improving?"

"No," I replied, "I don't believe that your vision is improving so much as I would hope that your ability to use it might be. Why?"

"I saw a bird on the lawn thismorning, and it was a robin! I had never seen one before!" was his answer.

Then there was the junior high school girl who called excitedly across the room after approximately three weeks of hard work in trying to learn to focus, "I can see where my pen is, I can see what I am writing!"

SERVICES TO MULTIPLY IMPAIRED BLIND CHILDREN

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I would like to share with you a few comments about multiply impaired blind children on the national picture: first, in regard to the children themselves, and secondly, in regard to services which are currently available to these children.

Children Under Discussion:

Professional persons are concerned about the number of blind children who are leaving school or being dropped from school, for whom there seems to be a dim outlook for the future. Many of these children either come to a standstill in their academic achievement, or they reach a stage where little may be offered them through the existing school program. What is going to happen to these children? Are they going to be able to live as independent persons? Are they going to be employable? Do they have skills which will enable them to earn a living? Educators are asking if there is something more which the schools might be doing to discover and develop latent skills or aptitudes which will be helpful to these persons after their school experience.

There are also children who have not as yet been in school. These children have been described as being "too immature," "mentally retarded," "not fitting into the program," or "requiring too much care." There are many reasons why these children have not been enrolled in current services: i.e., staff shortage, inappropriate curricula, lack of space and physical facilities.

There are also young children of preschool age in whom an impairment in addition to their blindness may be observed. A few are recognized as "defective", in the medical sense, as early as in infancy. These children represent innumerable, and sometimes unknown, combinations of impairment. There are those who are blind and have a severe hearing loss. Others function as deaf children, that is, they are not able to perceive, or "receive the message." Some children are mentally deficient. As may be expected, there will be blind children at the lower end of the I.Q. distribution curve as well as at the upper end. Some will have cardiac disorders and other crippling conditions. There are also children who are anxious, fearful, withdrawn, often not recognizing themselves as persons and not communicating verbally.

The Census Bureau reports about 4,200,000 births each year. The latest report is that the annual rate is decreasing rather than increasing, and that by 1970 about 4,100,000 births may be expected. Reports from the National Institute of Neurological Diseases and Blindness state that one out of sixteen births shows some kind of neurological deviation.

It may not be severe – it may be quite minor – disappearing within the first few months of life. Some of the children will be blind. Those children whose only impairment is blindness should develop well; but it is also known from demographic studies pertaining to the prevalence of blindness, that many of these children may be multiply impaired and in need of a variety of services.

Turning to the causes of multiple impairment, some conditions may be traced directly to prematurity. The hazards of prematurity are well known. Others result from metabolic disorders, birth trauma, viruses, etc. The possible damaging effects of drugs has also been noted, as with thalidimide some years ago. Other causes are still unknown.

Certain findings from medical studies concerned with the epidemic of maternal rubella (German measles) which occurred in the United States between the years 1963 and 1965, are being reported. For example, the first trimester of pregnancy is the most critical period for a pregnant mother to contract German measles because of the vulnerability to this virus of brain cells and of the organs such as the eye, ear and heart of the fetus. Some investigators believe that the virus affects the fetus by slowing down the growth process of the brain cells. Normal cell division is slackened, thus it would seem reasonable to assume that the child is born with a brain cell deficiency, hence mental deficiency.

Other causes of impairment may be considered under the general heading of deprivation. Considering first sensory deprivation, it is well recognized that the blind child must use all other modalities, all other avenues of learning, which he has. He soon learns ways of functioning which are convenient for him. These should be respected, if they allow him to function more adequately, and should be taken into consideration especially when the child's development and potential are being evaluated.

Not only is there sensory deprivation, but many of the children have lacked opportunities for learning, a deprivation so closely allied to lack of vision! One has only to observe for a few moments a group of seeing children at play or in school, to be reminded of the extreme experiential deprivation which can so easily result from blindness without adequate opportunity for learning about the world, its things and its people.

Experiential deprivation may be seen at any age level. For example, there was the baby who was kept safely in his bed long after a time, when he should have been encouraged to sit up, bolstered with a pillow, that he might have a feeling of an upright position, or to stand on his feet, that he might know the sensation of feet on floor and legs supporting weight. To take another example, there was the young girl who at nineteen years of age was through school but had never rinsed her hose in a basin of water because it had always been done for her. Neither the baby nor the young girl were necessarily "retarded" but they both lacked opportunities for learning.

Another kind of deprivation may be observed. A child should learn at an early age to distinguish between things and people; he should know himself as an entity, how he differs from things. It is quite possible for little children to lack such understanding - as with the little girl who thought she was part of a piano and only functioned well when touching or playing the piano. How does one help a child to understand things and their use, or people and their purpose? The notion that it is important for any child to have a knowledge of himself and to have a close relationship early in life with another person has been repeatedly substantiated through studies of child development. A child must know people if he is going to be able to know himself.

These children present certain common characteristics. They are generally slow to learn self-help skills such as, dressing themselves, eating and taking care of their personal needs. Some children seem to persist in certain behavior. (How often one hears: "He has a one-track mind!") They may resist new experiences and tend to react negatively, often in a self-protective manner, to that which is strange or unfamiliar to them. Sometimes, they do not communicate verbally or they repeat what has just been said in the same tone of voice. Some children have motor patterns which appear bizarre. Little is known about the reason for or cause of these mannerisms, but there is evidence that they serve a definite purpose to the child who is blind. Some have a different gait, a spastic-like walk or tiptoe step. Many have excellent memories and ability to recall. When one approaches, hopefully to help, they seem to have a tendency to ward off all kinds of intrusion.

One of the major problems is that evaluation of the blind child is so frequently based on what such characteristics indicate when observed in a sighted child, rather than on what they mean when observed in a child who must function without sight. Methods of evaluating a blind child require serious consideration, but beyond the purview of this present discussion related to services.

Current Services:

A. Medical:

Attention should be called to two medical programs. First, through the Collaborative Project conducted by the National Institute of Neurological Diseases and Blindness, fifty thousand mothers are to be studied before and after the birth of their children. Information concerning causes of deviation should be available from such extensive and detailed data.

A second program is that of the Secretary's Committee on Mental Retardation which administers public or Federal funds to support education and welfare programs, research grants, training grants, the construction of facilities, etc. It is through this program that one sees the development of new diagnostic and evaluation clinics, birth defects clinics and related services to young children. Such services should make possible early identification of impaired children.

B. Educational:

Thinking first of the younger children, it has been clearly demonstrated that early services directed toward blind children of preschool age can generally enhance their development, help to alleviate problems, and be most supportive to parents. Today, in every state there is more awareness of the significance of a child's early formative years through such federally supported programs as that of Head Start. It may be observed, however, that at the same time, many services to young blind children have been diminished rather than augmented.

Multiply impaired blind children have always been enrolled in our schools. However, one is undoubtedly more aware of them today because of their increasing number. They are currently enrolled in both private and public residential and day schools, specialized centers, and hospitals and training schools for mentally retarded children. Certain state hospital schools, for example, are beginning to offer more intensive care and training to retarded blind children with support from Hospital Improvement Program funds, another example of the current effort to combat the effects of mental retardation.

Various approaches in working with these children are observed. In one setting emphasis may be upon training and teaching: self-help skills; recognition of objects, their uses, similarities and differences; relationships; time concepts; space concepts; freedom of movement or mobility. And speaking of "mobility," for the baby it begins with his early motility, recognition later of his mother's voice, and awareness of the direction of its sound. What are the tactual experiences that are important to the child? How may sense training materials, such as Montessorri equipment, be used most effectively? What new materials should be used in teaching?

If the above mentioned approach seems to have teaching and its core, often in quite structured situations, other approaches may be described as being more therapeutically oriented. Many types of therapy are noted, all directed toward helping to develop in the child a sense of his own well being, to improve his "symptoms," so to speak, and to strengthen interpersonal relationships and family acceptance of the child and his blindness.

Another approach focuses upon the physical development of the child. In some instances emphasis is upon body-building through high-protein diet and physical exercise. Some programs are highly structured with specific objectives such as that of neurological reorganization, the development of dominance as a specific goal, and consequent improvement of sensory perception. The purpose of all these educational services has been most aptly stated by a school superintendent who says: "We are trying to give every child as much opportunity to respond as possible."

In working with these children we are constantly learning more about the complexities of child development. We are realizing the importance of consistency in handling. We are recognizing the importance of firmness and how children respond to a strength they feel in their environment. As a psychiatrist who treats blind children often points out, the television commercial is extremely convincing to a blind child. The voice is there: strong and immediate! Do we handle children with the same kind of stability and do we instill in them the same kind of confidence when we are with them?

We are learning more about what is involved in change, when children have to make transitions in their personal relationships, or in their life span. We see cultural differences and their effects upon the child. We know the importance of success and how it motivates children to further achievement!

Many questions remain unanswered. How do some children try to communicate with adults? Do they communicate differently among themselves? What is this "inner language" which some children use? How does fear affect a child? Can a fearful child learn in the classroom, or at home? What is the tolerance threshold for some of these children? How can a child's progress be appropriately evaluated? Will he hold a particular level of achievement or regress later?

How do these children learn? A recent article[1] discusses ten identifiable theories of learning, every one of which must be applicable to children who are blind. But maybe the question should not be concerned with theory of learning as much as with "theory of instruction."

The phrase of "theory of instruction," is borrowed from Dr. Bruner's book, Toward a Theory of Instruction, in which he discusses the "dialogue" which takes place in a teaching-learning situation.[2] It may be between parent and child, instructor and pupil or professor and scholar. A question invites a reply; in like manner, action invites reaction in response. Does a blind child's question or behavior bring a response from his teacher, or houseparent, which serves as a building stone for further achievement?

In summary, there are many blind children today in need of special educational services and it is likely that the number will increase. Some of these children are in schools where different approaches are being used in an effort to foster their optimum development and achievement. Much has been learned about teaching these children, yet many questions are still unanswered.

In an era of unprecedented technological advances and innovations, new theories, materials and devices are emerging. It is to be hoped that the same creativity may be found in the field of education, and that these children may benefit. The need is for more teachers who are ingenious, inventive and ready to try new approaches.

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[1] Morris L. Bigge, "Theories of Learning," National Education Association Journal. March 1966.

[2] Jerome Bruner, Toward A Theory of Instruction, (Harvard University Press, 1966).

WHAT THEY ARE ALL DOING

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While there has been a vocal and literary dialogue on the education of blind multiple handicapped for many years, quietly there have been some isolated experimental programs developed throughout the country in recent times. Some have originated in schools for blind children while many have developed in schools for the mentally retarded. The programs vary in philosophy and methodology as well as in quantity and quality. What is fascinating is that programs with diverse approaches to the problem claim some qualitative success. Is it possible that methodology is really not as important as most educators would like to believe? Is it possible that sincere, professional teachers who use any one of many well constructed pedagogic techniques will obtain equal, or near equal, success in training these children? Or could it be that extensive human contact in a stimulating environment is the major ingredient that produces success in many of these programs?

As one reviews the philosophy and the methodology of the various programs, one becomes aware of some commonalities in all of the procedures. It becomes evident that teachers cannot teach emotionally disturbed children in groups. The child is referred to a psychologist for therapy and he may be excluded from a structured program. The goal is to stabilize the child so he may re-enter the world of social beings and group living; the therapy recommended may be individual, group or play and these procedures are well documented.

One form of therapy that is not used to any great extent since it is difficult to implement is what I call the "controlled environment" approach. The goal of this form of therapy is to create an atmosphere of acceptance in which a disturbed child can positively respond. It is imperative that all personnel including housemothers, cooks, maintenance men as well as teachers have a warm feeling of acceptance for each child. If this accepting environment can be kept consistent over a period of time, most children will relate to this human warmth and somewhat resolve the symptons of rejection. The "controlled environment" is fundamental to the Hope School program. To insure that a disturbed child who is progressing does not regress, it is imperative that counseling sessions be held with the parents. This should be an integral part of any residential or day school program.

While the process of stabilization of a blind emotionally disturbed child is ongoing, there should also be an attempt towards developing self-concepts and general orientation of the self to the immediate environment. Developing a self concept should begin as early as possible with a teacher in a one to one relationship. The child is taught the parts of his body beginning with the features of the head and systematically following the appendages of the body ending with the feet and toes. The teacher uses the methodology of pointing the child's finger to a part of the child's body (i.e. eyes) and names that part. After considerable repetition, the teacher asks the child to point to a part of its own body upon request. If the child responds correctly, the teacher knows that the child has learned the name of that area of the body. This method is very effective with non-verbal children.

Once the child has developed a self concept, the teacher then attempts to establish an elementary relationship between the child and his immediate environment using the identical method. After clothing, the names of eating utensils and pieces of furniture are taught.

The development of a self concept also introduces a child to the world of receptive language. Though a child may be non-verbal, he can attain a considerable meaningful vocabulary through this system of instruction. If a blind emotionally disturbed child is not aphasic, he usually will develop expressive language as he regains emotional stability; this is not true with blind aphasic children. The development of expressive language is critical to the future training and education of blind multiple handicapped children. Without it, a child will be a candidate for custodial placement.

Following this comes an introduction to spatial relationships; for after the development of a self concept and a meaningful vocabulary the need for a blind child to develop spatial relationship and general orientation are of the greatest importance. Spatial relationships and orientation are the synthesis of stimuli received by the various senses These can be developed by following the methodology originated by Edward Sequin over one hundred years ago and elaborated by Maria Montessori. By concentrating on sense training, a child can be taught to use the remaining senses of hearing, touch, smell and taste effectively. At its culmination, a child will have developed some comprehension of what he is and what the immediate environment is in which he lives.

As a child stabilizes and matures it becomes necessary to socialize him. For the ability for a child to successfully relate to others within a group setting is primary to any real progress. This next step begins when a child is introduced to another child in a class setting. The emphasis is on sharing a mutual teacher and materials. Eventually they learn to cooperate with each other and this leads to participation in a larger group.

As a child matures socially with comprehension, he seeks a wider latitude of independence. This independence implies an ability to learn and assume responsibility for self-help skills as well as some household duties. A child could become responsible for setting a table, washing and drying dishes, making beds, preparing a snack lunch and the use of a telephone.

Thus the goal of all programs for the blind multiple handicap include an attempt to stabilize emotional disturbance, development of a self-concept and language, spatial relationships and general orientation, sense training, socialization through group participation and the introduction of self-help skills. Depending upon the individual potential of each child, it is possible that upon attaining adulthood, a blind multiple handicapped person could achieve an academic equivalent of the fourth grade level and, perhaps, qualify for a sheltered workshop.

A REVIEW OF RECENT LITERATURE ON THE MULTI-HANDICAPPED CHILD AND RELATED AREAS

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Many articles have appeared concerning need for services for multiple handicapped blind children, but there is very little research on this group. The research which is available is largely limited to describing the results of surveys, appraisal and evaluation, or the establishment of new programs. Several studies supported by the U.S. Office of Education, Division on Handicapped Children and Youth, are under way which should contribute important knowledge in the future. This paper reviews the research concerning multiple handicapped blind children during the past three years.

Among the surveys, Jones and Collins (1966) reported a substantial increase in special school services for children who have one or more major handicaps in addition to visual loss or impairment. Seventy-three per cent of local programs and ninety-four per cent of residential schools reported serving children who had one or more additional handicaps such as emotional disturbance, mental retardation, speech and special health problems. However, only nineteen per cent of the residential schools provided programs for trainable mentally retarded blind children.

Dauwalder (1964) in a survey of ophthalmologists reported an incidence of 24.52 per cent for the multiple handicapped among the totally blind, and increased numbers were forecast for the next five year period.

Kirk (1965) noted in a study of Detroit's program for blind children that the majority of the children in the program had an I.Q. below 82. She recommended special classes for the slow learning blind. Buckman (1965) noted that of the 137 children in a residential school, 96 were diagnosed as having additional handicaps to blindness. There were 67 children with psychiatric disorders, 45 with mental retardation, and 39 with epilepsy or brain damage without motor involvement. Dinsmore (1966) noted an increase in registered deaf-blind children in this country from 133 in 1945 to 417 in 1965. She estimated that this figure represented only one-half of the actual population.

Cohen (1966b) in a follow-up study of blind children noted that 50 per cent of the children with visual acuity of light perception or less had an I.Q. below 70. He hypothesized that much of the retardation was due to generalized psychological impairments such as visual deprivation. This deprivation could affect the brain's information handling capabilities in addition to the loss in perceptual integration due to effect of the absence of visual input. Visual deprivation may also be a cause of emotional problems because of the inadequacy of perceptual data for intersensory confirmation of the environment.

Miner (1963) found speech defects among 33.6 per cent or 293 visually handicapped children in two residential schools, but discovered no differences between boys and girls or those who used braille or print. Selection factors and institutionalization were not controlled. Haspiel (1965) studied early developmental data on 60 disturbed visually handicapped children. Similarities between this population and sighted schizophrenic and/or autistic children were noted. Deficient language, speech and auditory functioning appeared to be utilized as a defense mechanism against an unacceptable environment. There appeared to have been a marked absence of babbling among the children at the preverbal state and it was concluded that verbal interaction between parent and child was lacking for the emotionally disturbed blind child. Weinberg (1964) investigated the incidence of stuttering among blind children in residential schools and found it to be within the range of the normal population.

Appraisal and evaluation of multiple handicapped blind children is an important area that has received consideration. Gruber and Moore (1963) describe appraisal and evaluation of severely disturbed blind children including medical, neurological, and psychological examinations. Appropriate psychological instruments are listed along with behavioral check lists and illustrative case studies of typical children. In addition, they discuss family counseling procedures and the design of the school program for such children.

Guess (1965) investigated the influence of blindness and non-ambulation on stereotyped behaviors (such as sway, rock, eye poke, shake hand before eyes) of profoundly defective males (CA 6-20). He found a higher rate of stereotyped activities among the blind when compared to the sighted. Blindness and non-ambulation both were found to significantly increase self stimulatory behavior.

Stone (1964) noted two types of mannerisms ("blindisms") among mentally retarded blind children. Vigorous rocking was characterized as a withdrawal type of mannerism that served to block out environmental stimuli. Hand clapping which occurred on heightened contact with and pleasure in the environment was considered an alerting type of mannerism. Differences in the two types were recorded in EEG patterns with more rapid movements during alerting types and slower tracings during withdrawal types. Cohen (1963) in a study of 43 retrolental fibroplasia children from Chicago noted that 36 of 37 electroencephalograms showed abnormalities. Lairy and Netchine (1963) studied EEG patterns of partially seeing, blind, and seeing children and concluded that differences found in patterns might be "... a functional expression of the oversolicitation of a cortical area," and may"... play an indirect part in increasing the difficulties in achieving perceptual-motor efficiency..." It would seem that other investigations of these possibliities should be pursued.

Curtis (1966) recommended a multidisciplinary approach in the evaluation of the verbal performance in multiply handicapped blind children in which participants included a social caseworker, a physician, a psychologist, an educator, and a speech pathologist team. In the assessment, he recommended that the child be observed in a large playroom to observe gross speech patterns, in a special audiometric chamber for additional speech evaluation and in a small reverberent room to observe the child's hyperirritable behavior. Elonen and Cain (1964) described the diagnostic evaluation and treatment of deviant blind children at an outpatient psychiatric clinic.

Donlon (1964) outlined the role of various disciplines as they combined efforts in the process of evaluating the multiple handicapped group at the Syracuse Center for the Development of Blind Children.

Templer and Hartlage (1965) demonstrated the reliability and utilization of the hand-face test with retarded blind. The blind and sighted retardates in the study did not differ significantly in their performance on the test. Significant correlations were found between M.A. and hand-face test scores.

Few examples of current ongoing intervention type studies can be found. Mattis (1966) described a current onegoing research project at a mental health center for visually impaired multi-handicapped children in New York. A concept formation program has been designed for the development of concepts with children diagnosed as aphasic or moderately retarded. A day treatment program has been designed for children viewed as autistic, schizophrenic, or profoundly retarded.

Imelda (1966) described an experimental program at a private non-sectarian school for multiple handicapped children in which the Doman-Delacato neurological approach is being studied. The experimental group of children participates in such activities as patterning, crawling and masking whereas the control group receives an enriched physical education program. Both groups obtain a general program consisting of tactile stimulation, language development, daily living skills, and travel. The successful placement of many of the children in regular school programs has been an outcome of the project.

The results of a study by Robbins (1966) failed to confirm the validity and practicality of Delacato's theory of neurological organization. Second grade subjects from three schools were tested in arithmetic, general intelligence, laterality and creeping. An experimental group underwent a program which included such activities as cross pattern creeping and walking, avoidance of music, use of the appropriate sleep position, and of sidedness and cross patterning activities. Robbins found no data to support the theory of Delacato's neurological organization. He also pointed out that the lack of research to support this data indicated a need for controlled studies using generally accepted research methods if advocates of the theory wish to gain acceptance in the field.

A few case studies of multiple handicapped children have been reported in the literature during the past three years. Sellye and Thomas (1966) used three case studies to illustrate the feasibility of mobility with multiply handicapped children. Each child was successful in learning to travel about the school as a result of regularly scheduled lessons with mobility specialists. Cohen (1966)[a] used a case study approach to describe the development of a blind spastic child who endured severe emotional deprivation and neglect as a baby but obtained a successful rehabilitation program at an early age. The child suffering from spastic quadriplegia, emotional deprivation, and other complications was placed in a foster home and given a stimulation program which proved very successful.

Elonen and Zwarensteyn (1963) described a summer program for multipie handicapped children at a residential school for the blind, and Elonen and Polzien (1965) reported successful results from the program after four summer sessions. Cicenia and others (1965) described the program conducted in the unit for the blind at Johnstone Training and Research Center. Davidow (1962) reported subjectively determined gains in four areas of social behavior in a study of 45 mentally retarded blind children.

Harth (1965) reviewed the literature on the emotional problems of blindness. He found that the writers generally stress the importance of early childhood experiences, opportunity for communication, family integration and opportunities to explore and develop the remaining senses. Anderson (1965) compiled a bibliography of the literature concerning the visually impaired mentally retarded during the last 25 years.

Since research is so scanty in the education of blind-multiple handicapped children, it is necessary to turn to other areas in an attempt to find answers to problems. Maternal deprivation is a concern of many educators of multiple-handicapped blind children. This may be due to the large number of children placed in institutional settings at an early age or from the attitudes of rejection or over protection of children by mothers of these children. Maternal deprivation covers a broad area and has been researched and discussed by psychologists and social anthropoligists for many years. Yarrow (1961) reviewed the literature on maternal deprivation and attempted to clarify concepts and classify data obtained from the extensive literature available in this field. He found four kinds of deviations: (1) institutionalization; (2) separation from the mother; (3) multiple mothering; (4) distortions in the quality of mothering.

Most of the generalizations about the effects of maternal deprivation were based on research in institutionalization. He identified three areas of deprivation: (1) sensory deprivation; (2) social deprivation; (3) emotional deprivation. He reported that sensory deprivation studies range from the animal studies which reveal retardation from complete restriction of perceptual experience to the child studies which reveal developmental retardation from lack of sensory stimulation in institutional environments. From a review of the literature, he concluded that severe sensory deprivation before one year of age, continued over long periods of time, is likely to be associated with severe intellectual damage. Also, he found that there is general agreement that maternal deprivation in early life tends to be associated with later disturbances in intellectual and personal social functioning.

Ainsworth (1962) reviewed the research on maternal deprivation and concluded that maternal deprivation without physical separation can be as devastating as maternal deprivation with separation. She found evidence that indicated that maternal deprivation could have a tremendous impact on the development of the intellectual processes such as language, abstraction and certain aspects of personality. Maternally deprived children had difficulty in maintaining meaningful interpersonal relations, and maintaining interest in long term goals. She noted that evidence indicates that deprivation offered by institutions chiefly stems from insufficiency of intimate interpersonal interaction rather than perceptual deprivation. She concluded that although early mother-child interaction is a necessary condition for healthy development, there is little research to indicate what kind of interactions are necessary for this development. No one has really determined if blindness has any important part in hindering the mother-child interaction process.

Research in cultural deprivation may provide assistance to the educator of multiple handicapped blind children. A project at Peabody is typical of several such projects now taking place in this country at the present time. Gray (1964) is testing to see whether it is possible by a relatively massive program of intervention with mothers of culturally deprived children to make measurable changes in the intellectual performance of their children. The mother is placed in the preschool program with her child to learn new ways of interacting with the child. A supplementary home visitor program has as its purpose the adaptation of the procedures and materials of the preschool to home use with the younger siblings. Preliminary results from a recent study by Klaus and Gray (1965) that is now being concluded indicate that it is possible to improve the intellectual functioning and personal adjustment of culturally deprived children through special experiences provided for them in the 15 to 24 months preceding entrance to school.

A demonstration project has just started at Peabody which is a home teaching project for mothers of deaf infants. The mothers learn to interact with their deaf infants in a model home under the supervision of a specially trained teacher. Home visitation and parent counseling are also an integral part of the parent-centered program. A manual of guidelines for parents will be prepared from the data to be accumulated during the project. A similar type project with parents of blind and blind-multiple handicapped children is being contemplated.

The number of general articles and surveys indicated greater awareness of the problems of multiple handicapped children and may stimulate more research and more adequate research. Intervention studies to bring about behavioral change and to evaluate the efficacy of different educational procedures are urgently needed. As Cruickshank (1964) observed, it is important to think of the individual needs of each child rather than in categories of handicapping children. The low incidence of children who are blind and mentally retarded, blind and emotionally disturbed, or blind and orthopedically handicapped presents many problems to the educator and researcher in the future. However, related research in other areas may assist in providing insights and understandings in the education of these children.

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THE SAINT JOSEPH SCHOOL FOR THE BLIND PROGRAM

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Saint Joseph's School for the Blind is a private non-sectarian school for multiple-handicapped blind children. At present there are 48 children, 33 of whom are resident.

Children are acceptable who have such handicaps as: total blindness, functional retardation, emotional disturbance and/or orthopedic problems, convulsive disorders, communication problems, cerebral palsy, overt family rejection or who are orphaned. Their I.Q. ranges from non-testable to seventy-five on the Hayes-Binet and the WISC Verbal Scale.

Administration and Staff

This school is administered by five Sisters of Saint Joseph: one being a chief administrator, one a directress of personnel, aides, and volunteers, and three of whom are teachers. There are 22 full-time lay staff and 21 doctors on an active Medical-Dental Staff as well as 22 full-time aides from the Federal Anti-Poverty Program and 400 volunteers from the community near and far who give a minimum of one hour per week to help us educate these children.

Budget

The present operating cost is $150,000 per year over a ten-month period. This means a minimum per capita of $3,000. This amount is being realized through private tuition, state aid and donations. More than half of the total cost is paid out in lay-staff salaries. An alumnus, who attended our school when the concentration was on the average and gifted blind, and who received his degree from a university in Communications and Public Relations, is in training as our Public and Community Relations Person. Through his efforts we hope, not only to be able to continue with the present budget but to increase in ability and facilities to handle the many multiple-handicapped blind children who ask us for help.

Objective

Our program objective is the social, physical, emotional and educational independence that is related to the full potential of each individual child considered uniquely. Group and individual programming is constantly being planned, re-evaluated, and replanned.

Curricula

Curricula used in this planning has been:

1. An Experimental Curriculum for Young Mentally Retarded Children, by Frances P. Connor

and Mabel E. Talbot, Bureau of Publications, Teachers College, Columbia University, N.Y., 1965.

2. Curriculum for the Mentally Retarded, by Sisters of St. Francis of Assisi, St. Coletta Schools, Cardinal Stritch College, Milwaukee, Wis., 1961.

3. Learning Experiences for the Educable Mentally Retarded Child, Board of Education, Newark, N.J., 1959.

4. The Diagnosis and Treatment of Speech and Reading Problems, by Carl H. Delacato, Charles C. Thomas, Pub., Springfield, Ill., 1963.

5. The Montessori Elementary Material, by Maria Montessori, Robert Bentley, Inc., Cambridge, Mass., 1964.

6. Employment Orientation and Related Fields, by Joseph F. Cappello, East Windsor School District, Highstown, N.J., 1965.

7. The Slow Learner in the Classroom, by Newell C. Kephart, Charles E. Merrill Books, Inc., 1960.

8. The Other Child, by Richard S. Lewis, Alfred A. Strauss, and Laura E. Lehtinen, Grune & Stratton, New York, N.Y., 1960.

The application of such a curricula makes Saint Joseph's School a very busy place. Here, happiness is a furry, perky cat. Sadness was the loss of a dearly-loved pup who ran away one day, teaching a lesson about the passing realities of this life.

Curricula Implementation

Here, educable blind children learn the basic tool subjects through the medium of braille reading and writing, by developing listening skills and by close contact with people who have traveled and studied in many parts of the world. The fifth grade is maximum achievement level at this time. Social studies are emphasized by using many different globes and maps, taped materials and field trips near and far. Language stimulation is increased by great amounts of socialization, taping conversations, dramatic play, puppet playing, telephone education and speech and language therapy.

Our speech therapist gives individual and group therapy to 16 children whose problems range from "no speech" to "articulation disorders."

Occupational therapy is given on an individual basis. Most children receive at least three hours of it per week. The therapist is a nearly-retired gentleman with whom the children identify as a father or grandfather and vie with each other for frequent appointments with him for the purpose of making crafts and having a heart chat. They make such things as tiled hot plates, cord-woven baskets, cotton-ball dolls, colored-gravel art, popsicle-stick flower pots, picture frames, bird houses, jewel boxes, necklaces and bracelets and during class time pursue creative clay modeling.

Many children are given sequential tactile training and exercises to develop manual competence. Dancing, including ballroom, tap, and ballet have been given to the older children according to interest. Music is stressed with most of the children, including instrument and piano playing and individual music therapy according to interest and need.

Ham Radio is another activity available for those boys and girls who show an aptitude and liking for it. One set for beginners takes in a 60 mile radius. Another transmitter and amplifier can reach stations all over the world for those who are so motivated that they are able to earn a General License.

Physical Activity Approach

Physical education is stressed and fills most of the spare moments. Swimming is a necessary and delightful part of our school life. Tandem bike-riding with volunteers is encouraged. Many trips to the neighborhood park provide the needed grassy environment and wide open spaces. Calisthenics, isometrics, wrestling, rope climbing, bar and ladder exercises, basketball, and low organization games are scheduled for after school and after supper.

Psychological Approach

Psychological services have a unique and important place in the curriculum. Eleven children receive individual psychotherapy from part-time psychologists and six boys are in group therapy. They call it "The Club." A full-time psychiatric social worker is employed as administration secretary. The children are always running into this kind person thinking they are "bothering the secretary" and ramble on about their jobs and heartaches. This same person tries to get in regular home visits. The part-time psychologist sees some parents for counseling. Every two years psychological reports are made.

Habilitative Approach

Typing is taught to children who have reached a fourth grade level of academic achievement.

Brownies, Junior Girl Scouts, and Cub Scouts make Wednesday afternoon and evening a weekly highlight.

Activities of daily living are stressed in the classroom and by the houseparents, such as putting on clothes, tying shoe laces and buttoning, zippering, snapping wearing apparel, and learning to eat with the proper utensils. In the beginning, the meals were brought to the children and they thought they dropped from the sky magically. Now we ask them to take their plate to the food truck and serve them from there, talking to them about the menu all the while. They then proceed to their own table accomplishing orientation and mobility skills as well as being more aware of reality.

Rehabilitative Approach

A well-thought-out rehabilitation program is given to students 13 to 16 years of age who will not be able to move into a regular school. Two mornings each week, covering eight hours a week, these students go to an occupational center one mile from the school and are exposed to many different types of contract work with fifty sighted, retarded trainees and "encore" workers. Such jobs as: putting erasers into metal inserts, assembling the interior of part of a lead pencil, re-assembling boxes, sorting, etc. are accomplished under the workshop supervisor. Motivation toward work has become intensified to a very high degree. A monthly pay check fluctuating between one dollar and six dollars give the students and our staff an idea of their potential in the vocational area. This part of their training costs the school three dollars per four hours for each pupil. Two years of individual planning and orientation and close laison with out-of-State rehabilitation counselors make it possible for them to go into sheltered workshops in the particular State from whence the students originate. Jobs around the school are emphasized for this group as well as intensive mobility training and vocational and personal adjustment counseling.

Medical Services

Our school is fortunate to have 21 medical specialists volunteer their time and services to us. Most are Chiefs-of-Staff at the near-by Medical Center. Six pediatricians and four doctors of internal medicine each take a month to be totally responsible for emergencies, coming in one morning each week for "sick bay" and to do some complete "physicals." If a child needs a follow-up service, the doctor who initiates it follows the case. The psychiatrist is a member of this team. For special problems referrals are made to other medical staff members by the doctor in charge and through our school nurse.

When night comes tired but happy children go to bed and instantly fall asleep. For this reason we have no night supervisors. The house-mother sleeping on each of the two floors is seldom awakened by restless, sleepless children.

Neurological Approach

A more detailed treatment is needed regarding sixteen of our children who have very severe learning disabilities. Eight of these children cannot speak and are functioning on approximately a one-year level but are between the ages of nine and fourteen. Eight other children are functioning at a two to five year old level and have a nine to fourteen chronological age. The former group were despaired of by any psychologists, educators, and speech pathologists who evaluated them. There were not too many answers for the latter group either. For this reason we turned to the rehabilitationists at the Institutes for the Achievement of Human Potential, 8801 Stenton Avenue, Philadelphia, Pennsylvania. Two Sisters on our staff were given a grant to study the Doman-Delacato Neurological Approach to brain damage. This team claimed to have been successful with sighted children who were brain-damaged. This approach has been underway at our school for the past year and a half. Since there is such severe involvement we do not feel a true evaluation can be made for at least three or four years. However, already there has been enough improvement to warrant the continued intensive training and education it demands. Along with this approach we superimpose all the enriching, learning techniques our highly-trained staff can offer. Group One has a strict control, though not considered sophisticated research.

There is strong emphasis on tactile stimulation using the grab bag and identifying a wide variety of large-to-small objects and materials. Manual skills are in the daily lesson plan. They do such things as: pour an object from one cup to another, screw and unscrew jars, bottles and bolts, arrange nesting toys, play peg games, place tiny wheels on autos, pick up large and small coins with both thumb and index finger simultaneously, among many other things. Gnostic and gustatory sensations are given much stimulation. The key is subjecting the child to large amounts of meaningful stimulation which has been gradually developed and is now becoming a truly structured curriculum.

Language is stressed, along with spelling, arithmetic, and reading through listening, with emphasis on comprehension and vocabulary, to the degree and in areas in which each child is ready for these. Those functioning on a one-year-old level would not be ready. Group Two gets more of the above-mentioned and in larger, longer doses.

Along with the afore-mentioned, and in conjunction with frequent meaningful field trips these same children are given what is considered unique to the Doman-Delacato Approach which is a treatment designed to stimulate remaining non-damaged cells into taking over the function of the dead cells by imposing on the brain the patterns of activity which help develop the brain of a normal, unhurt child. This consists of:

1. Patterning (simulating a baby's crawl) on a therapy table five minutes, four times daily.
2. Crawling on the stomach two hours (hopefully) throughout the day in fifteen to half hour periods.
3. Much incidental creeping when not crawling.
4. Masking for one minute once every waking half hour to increase the vital breathing capacity and further stimulate unused brain cells.
5. Attention given to the sleep position to supplement a continued effort to establish hemispheric dominance.
6. No music for entertainment is given to this group only because they are already super-saturated with this type of exposure since birth and also on the basis that music feeds the sub-dominant (non-directive) part of the brain and we are trying to give the dominant part of the brain a chance to "take over" for the purpose of greater self-direction.

The activities of daily living are given prime attention with a view to making these children less dependent on those around them. Learning how to wash hands and face and dry the same and eat without too much assistance are learning skills we cannot take for granted.

The control group is given all but the controversial, neurological approach and, in place of this, are given an enriched physical education program.

Every two months each child is evaluated and every single month tabulations are made as to how much was truly accomplished by each child as compared with the goal set by the teacher for them. The following table will give the reader some idea of the actual accomplishment of tasks as performed by a particular child, presently functioning on a fourteen month level, between November 1965 and March 1966:

SUBJECT NUMBER ONE

Tasks	*Amount Accomplished during November 1965	*Amount Accomplished during March 1965
No. of maskings	84 times	235 times
No, of patternings	54 times	92 times
Amount of crawling	3 hours, 35 minutes	27 hours, 30 minutes
Manual Competence	2 hours, 25 minutes	10 hours, 15 minutes
Tactile Competence	1 hour, 18 minutes	9 hours, 25 minutes
Auditory Competence	1 hour, 20 minutes	6 hours, 45 minutes
Language Competence	5 minutes	8 hours, 15 minutes
Story Telling & Reading	3 hours, 5 minutes	6 hours, 50 minutes
Number Concepts	15 minutes	3 hours, 35 minutes
Ordinary daily living	1 hour, 9 minutes	8 hours, 50 minutes

*Present task - attention span.........approx. 10 minutes.

Orientation Services

Frequent in-service training is given to any non-professional staff members and volunteers working closely with any of the children and bi-monthly staff meetings are conducted with the full team present at which time cases are presented for a deeper understanding of each child.

Resource and Itinerant Services

Two students have grown into an integrated program, attending the school "across the street" where 600 average sighted youngsters are being educated. Besides being involved in a full curriculum there, which includes such socialization with a peer group and an hour and a half of home work each night, these two students receive tutorial work in braille techniques from a resource room teacher. Along with 12 students in our special school, these two students receive individual mobility instruction two hours each week. The goal is independent travel to school using the cane or learning the route to the occupational center. More students are gradually being prepared to go to the community school, starting in the first few months with one hour per day. This has been another very successful part of our program. In the past five years many of our children have advanced to the point of partial or complete integration in educational programs for the sighted. Others have been accepted and are functioning happily and productively in sheltered workshops.

The Future

Our goal is to, eventually, be able to plan successfully in a long-range manner for all children admitted into our school, regardless of degree or multiplicity of disability. There are so many keys to reaching them that we do not possess but know, with a great certainty, that the children have not failed in this matter. We must keep searching. Members of our staff are constantly pursuing further studies at highly-regarded universities specializing in learning disabilities.

Our school has many educative and administrative projections for September of 1966 and future years whereby we hope to accomplish what is presently at the vision stage. However, we are running toward the goal and, with Helen Keller, we feel like shouting, "While they were saying it could not be done, it was done!"

SENSORY AIDS AND COMPUTERS: STATE OF THE ART AND PREDICTIONS

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In this review of sensory aids and the use of computers in work for the blind, emphasis will be placed on the current state of the art and predictions. For those who wish historical data and coverage of work not mentioned herein, principal sources of information are listed at the end of the paper.

Research on reading machines dates back to 1912 when a professor at Cambridge University (England) developed the Optophone. The current version of the Optophone has undergone extensive engineering research at Battelle Memorial Institute, where the preparation of materials for training subjects has been undertaken. Currently, clinical evaluation is underway at the American Center for Research in Blindness and Rehabilitation in Newton, Massachusetts.

A second type of direct translation machine is undergoing advanced engineering development at Stanford Research Institute. A compact array of photo sensors converts print to vibro-tactile patterns generated by piezoelectric bimorphs. The display, as perceived by the fingertips, is a magnified image of the letter outline. The print outlines may be processed by a computer for faster and more facile comprehension. The researchers at SRI hope that the entire device can be miniaturized to the point where it will fit in the palm of the hand.

Thus far, evaluation data has been obtained mainly from one subject (the blind daughter of a Stanford University professor). It will be two to four years before the final production engineered version is available in small quantities.

These direct translation reading machines have the following advantages: they are lightweight, compact, portable, inexpensive, and, for a skilled user, provide access to a wide variety of type fonts and typewriter print.

A direct translation machine such as the Optophone or the Battelle reader, which converts print to sounds or to a tactile display, however has many human engineering problems. Even after extensive exposure to the device, the blind reader rarely comprehends five words per minute. High motivation, tonal memory and other attributes are required if the reader is to accept the device. Unless human engineering studies are conducted and there is fresh thinking on engineering redesign, it is unlikely that direct translation machines will find acceptance among the blind. In spite of these critical comments, there is one individual in the world (Miss Mary Jameson of London) who has, for forty years, successfully used the Optophone to read books, letters and other printed material.

Another approach to reading devices is the character or letter recognition machine. This particular instrument contains enough logic to recognize a letter. Since most of the intelligence is built into the unit, the blind reader simply needs to know how to spell. The output can be either spelled letters, spoken by a human and retrieved from magnetic storage, or a tactile display including grade 1 Braille. Comprehension rates range from 60 - 120 wpm. In order to achieve rates of 90 - 120 wpm, the spoken letters must be specially modified (the beginnings and ends of letters are removed and the space between letters shortened). This modification has been done by Professor Metfessel and his staff at the University of Southern California.

Compared to direct translation devices, the letter recognition approach is complicated and costly. It is probable that letter recognition machines will cost between $3,000. and $5,000. apiece, if produced in quantities of 1000. As a result of research at the Mauch Laboratories and in the Cognitive Information Processing Group of the Research Laboratory of Electronics at M.I.T., it is possible to predict that a useful letter recognition machine can be constructed in three to five years.

A third approach is the word-at-a-time reading machine. In this instance, a substantial amount of computer capability is required. The equivalent of the original print is stored on teletypesetter tape which is then processed by the word reading machine. Research at Haskins Laboratories has progressed to the stage where it is feasible to build a complete word reader. Their word reader operates at 20 wpm, and stores the results on magnetic tape. Then, the magnetic tape can be played to achieve presentation rates exceeding 100 wpm. Last year, samples prepared at Haskins were read out at 102 wpm. With modifications in the method of retrieving the spoken words from magnetic storage, the use of electronic or computer time compression, the read-out rate to the blind could be as high as 300 - 500 wpm.

One main problem of the word-at-a-time machines is the blind person's acceptance of a monotonic presentation of words, as contrasted to the inflections and other subtle but desirable characteristics of a human reader. Another disadvantage is the high cost ($50,000. to $100,000.) which restricts ownership to a central processing facility.

In the publishing industry, there is a trend toward employing computers to edit material. As automation increases, compositor's tapes as well as optical and magnetic storage of print equivalents will become more accurate. These tapes represent a vast source of published information which can be made available to the blind through the word reading machine.

Braille and sound recordings are alternatives to the previously mentioned reading machines. Projects in the area of braille are underway in the Mechanical Engineering Department at M.I.T., and they include: (1) Construction of braille displays to be used to retrieve braille that has been stored in another coded form on punched tape, magnetic tape and optical storage. (2) A high-speed embosser is at the applications feasibility stage and can emboss braille at 16 cells per second. The embosser can be used (a) as a read-out from computers, (b) as a small scale duplicator and (c) to produce, simultaneously, a print and embossed copy when connected to an electric typewriter, etc. (3) A computer programming system (DOTSYS) to convert compositor's tapes to grade 2 braille is nearing the production feasibility stage. (Compositor's tapes are used in the production of most newspapers and magazines in the United States.) It is hoped that eventually the compositor's tapes translation system can be incorporated into production facilities at the American Printing House for the Blind (Louisville, Kentucky), Royal National Institute for the Blind (London, England), Germany, Denmark and other countries.

Developments in the area of braille include: (1) The conversion of computer line printers by the Honeywell Corporation and others, to produce braille at rates as high as 431 lines per minute; (2) Using computers for braille translation at APH, as well as at facilities in Denmark, West Germany, Israel, and soon in England; (3) New careers for the blind in computer programming; (4) New research at APH to write computer programs for musical braille and mathematical braille; and (5) New research at the University of Louisville on punctographic forms, including nine-dot braille.

Sound recording research and development is proceeding in the United States (under the auspices of the Library of Congress) and in England (under the auspices of the Royal National Institute for the Blind). Soon America and England will have machines containing tape cartridges which weigh less than a pound. Each cartridge comprises an entire book. The Library of Congress tape player has been field tested and the final production model is pending. Although the tape cartridge, or casette player, has been in use in England for more than six years, the newer, more compact version will be available in about a year.

The cost of magnetic tapes and tape recorders is decreasing while quality is increasing. New design features in battery- and AC-operated units make them more flexible as recording and listening devices for the blind. The tape cartridges are more readily handled by the elderly blind and those with multiple handicaps. Blind students and adults can look forward to a rapidly increasing variety of information on tape.

The American Foundation for the Blind and others are continuing to develop small, slow speed (8.3 rpm) records intended to be so inexpensive that they need not be returned to the lending library. This project should increase considerably the number of magazines recorded on discs.

Another important facet of sound recording is time compressed speech. At present, time compressed speech is produced by such instruments as the Tempo Regulator, the Varivox, the early Fiarbanks machine, and computers.

There are two aspects of time compressed speech (research and field testing) which are being pursued concurrently. Research (behavioral and technological) is in progress, or has been recently concluded at, the University of Louisville, the American Institute for Research, the National Security Agency, Harvard School of Education, and elsewhere. Researchers have established a rate of about 275 wpm as being entirely feasible for some types of text material (e.g., English literature) over long periods of time. For shorter study periods, rates of up to 475 wpm may be achieved by blind students. With technological advances in time compressed speech (computer time sampling), research at Harvard indicates that rates as high as 1000 wpm may be possible in the near future.

Field tests of study material prepared on the Tempo Regulator are being administered by the Hadley School for the Blind and in the New Jersey public school system.

In the preparation and use of time compressed speech, a great deal of research and field testing is necessary in order that all the important variables are measured and understood. Therefore, in the actual preparation of the text materials (by electronic compressors or computers) the variables which should be taken into account are: length of the discard interval, length of the retained interval, the sampling rate, the space between retained speech fragments, the rise and decay characteristics of the energy in the sound envelope, and the reduction of long pauses.

Utilization of time compressed speech involves such variables as: the types of text material, individual differences (i.e., intelligence, motivation, background knowledge, hearing acuity, etc.), quality of the playback equipment, the display (headphones or loud speakers), and the amount of time compression.

In the midst of considerable enthusiasm to apply time compressed speech, it is easy to forget one great disadvantage of electronic or computer time compression: the equipment is too expensive for ownership by an individual blind student or adult.

A practical alternative (speeded speech) is often neglected and maligned. There are many blind people who own a tape player and/or phonograph, which, when modified, will enable them to play sound recordings at a faster rate than that at which they were originally recorded. Playback rates of 325 - 340 wpm are possible without a significant loss in comprehension. The purchase and/or modification of equipment for speeded speech should be encouraged by all those interested in the education of the blind.

Another important area of sensory aids is mobility devices. The history of mobility devices dates back to World War II, when the Office of Scientific Research and Development sponsored a program, with Haskins Laboratories as the central facility.

During the past two decades, researchers have designed instruments to detect and identify objects, determine terrain changes (step-ups and step-downs), and for distance environmental sensing (including navigation and orientation data). Many inventors have hoped for a general solution to mobility problems.

The state of the art in research and development of mobility devices makes it possible to supplement the use of the cane or guide dog. As a result of a great deal of research and development in the fields of aero-space, data processing, electronics, etc., compact, reliable and highly sensitive mobility devices have evolved which can be readily head-mounted, built into spectacle frames, carried in the hand or concealed on the person. In recent years, there has been considerable improvement in the sensing capabilities of ultrasonic, near infra-red, ambient light, and laser or laser-like devices.

There are four mobility aids which show promise: The Kay-Ultrasonic Aid is an object detector and identifier, as well as a general environmental sensor. Environmental sensing is possible up to 20 feet from the user. This device has undergone evaluation in many countries, although the most thorough evaluations have been, and are being, conducted at the National Physical Laboratory (Teddington, England) and at the American Center for Research in Blindness and Rehabilitation (Newton, Mass.). Originally, 200 units were produced for evaluation by rehabilitation facilities throughout the world. There are plans to construct 1000-2000 slightly improved models. (2) A variation on the ultrasonic approach is the Russell Path Sounder which processes information obtained from the area through which a person's head, shoulders and upper body pass (the area not sensed by the cane). The internal logic of this unit determines the position of an object, or objects, in four zones at varying distances ahead and in the intended travel path. When an object appears in one of the zones, the device selects a distinct signal for display, which can be identified immediately. There is no sound when there is no object within six feet. (3) Bionic Instruments, Inc. (Bala Cynwyd, Pa.) has built three laser-like devices into a long cane. One sensor provides early warning of terrain changes, the second senses objects beyond the tip of the cane, and the third investigates the space above the cane handle (where the upper portion of the body passes). With efficient lasers and integrated circuitry, the weight of the long cane is increased by 12-16 ounces. (4) An ambient light unit is being developed at Stanford Research Institute, which is capable of examining the near environment by means of an array of piezoelectric bimorphs.

Researchers at the Presbyterian Medical Center (San Francisco, California) are studying correlates of visual imagery through the stimulation of areas on the chest and back with arrays of 96 or more vibro-tactile transducers.

Computers represent an important area of technology in which there is much promise for the blind. Among the applications are: (1) There are a number of facilities now which train blind people to become computer programmers. It is a prestige occupation which can do a great deal toward increasing the acceptance of the blind employed by industry and the government. The work involved in training computer programmers has been helped immeasurably by the Association for Computer Machinery Committee on the Professional Activities of the Blind. The University of Cincinnati, the Computer Systems Institute (Pittsburgh), the University of Southern California and M.I.T. have been responsible in the past for developing effective computer programmer courses. The Royal National Institute for the Blind (England) now has undertaken a very effective program to train computer programmers, and training is underway in Israel, West Germany, Denmark and other countries. (2) As a result of early research by IBM, The American Printing House for the Blind is able to use a computer to translate Braille. (3) A research program in the Mechanical Engineering Department at M.I.T. shows promise of opening up vast amounts of new literature stored in the form of compositor's tapes (teletypesetter tape for many text books, magazines, newspapers, and monotype tape for technical text books). (4) Time compression of speech is being investigated at Harvard to enable the blind to read at more rapid rates. (5) The simulation of mobility devices and parts of reading machines is being researched at M.I.T. to accelerate engineering development. (6) Computer analysis of evaluation data is now standard procedure in a number of sensory aids projects. (7) Processing of optical images for comprehension through the remaining sensory channels is being done at M.I.T., S.R.I. and other facilities.

The sensory aids mentioned above demonstrate the interest of technologists in the problems of the blind. Their efforts must be implemented by human factors engineering and thorough evaluations.

The importance of evaluating the worth of a sensory aid, on an objective and scientific basis, was recognized as early as World War II. Good evaluations should determine the worth of a device objectively and accurately, as well as contribute to the body of scientific knowledge on blind reading and mobility. Also, they should provide guide lines for building more useful mobility devices and reading machines.

Until recently, evaluations were conducted by different groups of evaluators who were recruited for each individual project. Therefore, there has been no continuity which is so necessary for standardization of evaluation procedures, adequate criteria, development of special instrumentation, controlled laboratory experiments which simulate real life, and being able to measure the contribution a device makes in the every day life of a blind person.

One of the most important aspects of good evaluation is the evaluation team. They should comprise behavioral scientists, technologists and rehabilitation specialists in work for the blind.

At the present time, St. Dunstan's (England) is sponsoring a two-year evaluation at the National Physical Laboratory (England), and it is hoped that the evaluation team can be retained on a permanent basis. The Sensory Aids Evaluation and Development Center at M.I.T. has confined itself primarily to evaluating sensory aids, other than mobility devices, However, this group hopes to establish a permanent evaluation team for mobility aids in the near future. The sensory aids groups in the Mechanical Engineering and

Electrical Engineering departments at M.I.T. have already embarked on basic research to create a mobility simulation facility.

There are some very crucial problems relating to potential applications of sensory aids: (a) for a given sensory aid, the consumer market is too small to attract commercial interest; (b) many blind people are unemployed or in the low income bracket; (c) the majority of the blind are elderly and require encouragement and training before they can accept new solutions to their problems; and (d) an increasing percentage of the blind are also multiply handicapped.

What is required, therefore, is a more carefully thought out program to move sensory aids from the research laboratory to every day use by the blind. Fortunately, there is growing interest on the part of government and private rehabilitation facilities for the blind to see that this is done. Also, there is a small but growing trend in industry to conduct public service research and development programs.

The key to successful applications of sensory aids lies in a continuum of thought and testing from the time an idea is conceived until the time some organization is willing to fund the manufacture of a number of devices. As communications improve among researchers, funding sources, rehabilitation facilities for the blind, and blind people themselves, we can look forward to a much more sensible, and therefore effective, implementation of research and development in sensory aids.

In closing, it is possible to predict some of the contributions that technology can make to the welfare of the blind during the next decade: (1) Computers will be used extensively for time compression of speech, simulation of mobility and reading machine parts for the more effective development of such devices, processing speech so the deaf-blind can perceive it, and opening up a greater many jobs for those who are prepared to understand and use computers. (2) With the advent of the letter or character recognition machine, the blind will have direct access to the New York Times and other publications at reading rates of 100 words or more. (3) Effective high-speed print recognition devices and computer converted compositor's tapes will open up vast areas of literature to the blind. (4) Mobility devices will be so compact, and useful, that the blind will carry them routinely to supplement the use of the long cane or the dog. Also, these devices will be sufficiently good environmental sensors so that the congenitally blind child will have a much better mental image of the three-dimensional world.

The effectiveness of technological research, development and evaluation, in terms of real applications, will depend to a great extent upon the establishment of better lines of communication among all those interested in the welfare of the blind. There should be some long range policy decisions, a continuum from the idea to the application, and study of the effectiveness of the application over time.

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RELATIVE EFFICIENCY OF READING AND LISTENING FOR BRAILLE AND LARGE TYPE READERS

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Throughout life man is confronted with decisions as to what to do and what not to do. Life offers him a vast banquet of things he might do while the relentless clock limits that which he may do. Ecclesiastes tells us there is, "a time to every purpose under the heaven," but, as educators, we often wonder when. And we wonder, are we making the best use of the time we have? As educators of the visually handicapped, a group that cannot work as rapidly as their fully sighted counterparts, ours is a problem of even greater magnitude than for our brethren working with the nonhandicapped.

Borrowing from industry a technique for self evaluation, we might ask of ourselves, how efficient a job are we doing? Webster defines efficiency as, "Effective operation as measured by a comparison of production with cost (as in energy, time, and money)." As educators we might ask, how effective a job of educating are we doing?

I want to talk about educational efficiency in terms of time. For the past several years the Department of Educational Research at the American Printing House for the Blind has been conducting a study to determine the relative efficiency of learning by reading and by listening. The study was designed to explore the feasibility of using recorded textbooks for braille and large type students at both the elementary and high school levels. Traditionally, recorded materials have been used primarily for supplemental reading by students at these levels, however, in some school systems recorded materials of a more difficult nature have been used with great success and, certainly, for visually impaired students in colleges and universities, readers and recorded material afford primary access to the written word. The study has been partially supported by a grant from the National Institutes of Health and has obvious implications for the Printing House's Talking Book program.

The possibility of using recorded rather than printed or embossed material in some phases of the education of the visually handicapped is an intriguing concept. From a strictly practical approach, recorded material has the advantage over nonrecorded material in the time saved by its use. Talking Books are recorded at approximately 175 words per minute; this being their normal noncompressed nonexpanded rate. Compare with this the rates reported by Meyers and Ethington (1956) for reading standard braille which range from 90 words per minute for high school students down to 50 words per minute for fifth and sixth grade braille students. Although there is little information available on large type reading rates, evidence accrued at the American Printing House has indicated that large type students read little faster than do braille students. The importance of this slow reading rate as an educational handicap become more evident when compared with average reading rates for the sighted which are reported by Taylor (1937) as 295 words per minute for high school students downward to an average of 195 words per minute for fifth and sixth grade students. More concisely stated, it takes a blind person from three to four times as long to read any given selection as his sighted peer. In terms of educational handicap, the reading rate discrepancy is one that grows in significance as a visually handicapped student advances through the grades and progressively encounters greater reading requirements.

Use of recorded material could provide a partial solution to the time discrepancy problem as recorded word per minute rate is approximately twice the high school braille reading rate and about three and a half times the elementary braille reading rate. Its use would diminish the difference between the time required by sighted and blind students to study a selection. Moreover, modern devices, have made it possible to electronically increase the word per minute rate of a recording without changing its frequency or other tonal characteristics. Previous research (Bixler, Foulke, Amster, & Nolan, 1961) has shown that such material can be comprehended as well as material heard at normal rates when compressed to play up to 275 words per minute for certain types of content. Use of such recorded material would place the user on a par with his sighted counterpart in terms of time required to study. However, a question still remains as to whether textbook type material can be learned as thoroughly aurally as when read. In order to answer this and other related questions, the Department of Educational Research undertook a large scale study comparing learning through listening with learning through reading. The purpose of this study was to determine how study time might be most efficiently used by visually handicapped students.

Listening-to-reading efficiency was researched for three separate subject matters. They were science, social studies, and literature. For each, two selections were used, one being appropriate for high school students and the other being appropriate for elementary school students in grades four through six. The difficulty of the selections was determined by the Flesch Reading Ease formula (1951). The selections used were deliberately chosen from books not available in braille, large type, or recorded form from the American Printing House to insure that a minimum number of subjects would be familiar with them. The scientific selections used were oceanographic in content, a subject which is barely mentioned in available science books, while the social studies selections were of a type that might only be encountered by an occasional student working on a special project. The selections were approximately 2050 words in length, long enough to contain a good deal of information yet short enough to be read in 40 minutes or less by the average student. The latter was important in order that fatigue not become a deterrent nor too much of the school day be used.

Five choice multiple choice tests of comprehension were constructed for each selection. They ranged from 63 to 77 questions each. Tests of this length guaranteed a wide range in scores even after deducting the 13 to 15 questions a subject could be expected to answer correctly by chance alone.

The six selections, as were their accompanying tests, were reproduced in booklet form in both standard English braille, grade 2, and in large type. In addition to this, the selections were also professionally recorded on magnetic tape by a regular male Talking Book reader in the Talking Book studios.

Many of you have had students during the past two years who participated in this study. A total of 1152 did. All were legally blind. They came from 11 public school systems and 18 residential schools and they were spread from the Atlantic to the Pacific. One-fourth of the students were elementary braille readers, one-fourth elementary print readers, one-fourth high school braille readers, and one-fourth high school print readers. The elementary students of each type were equally divided between the fourth, fifth, and sixth grades while the high school students of each type were equally divided between the ninth, tenth, and eleventh or eleventh and twelfth grades. All braille reading students had read braille for a minimum of one year.

To compare the effectiveness and efficiency of learning through reading and listening for both levels of the three types of subject matter under study, four treatment groups were stipulated. Subjects were randomly assigned to these groups which were a one-day reading group, a three-day reading group, a one-day listening group, and a three-day listening group. Three-day groups were used to ascertain the effect on learning of repeated exposure to the material. Students in these groups either read or listened to their material for three consecutive days. Immediately after each subject completed either reading or listening to his selection for the predetermined number of days, the appropriate test, given under conditions of unlimited time, was administered to measure the amount of learning.

Separate analyses of variance of the treatments x treatments x treatments x levels design were computed for the high school groups and the elementary groups for each of the subject matters under study. The six analyses were run to determine if differences in learning in any of the subject matters resulted from any of the main effects being tested or their interactions. The treatments under study were mode of learning (reading or listening), type of reader (braille or print), and amount of practice (one-day or three-day). Grades constituted the levels.

It was interesting, though not surprising, to find that in all six analyses amount learned was positively and significantly related to practice. This meant that, in every case, more was learned by the three-day groups than by the one-day groups.

Some other findings, relevant to the primary purpose of the study, were that high school groups learned significantly more social studies and literature through reading than through listening. The mode of learning made no difference in the amount of science they learned. With the high school groups studying literature, a relationship was found between practice and grade level. Here, students in the higher grades learned more from additional practice than did students in the lower high school grades.

More variance was found among the elementary groups than among the high school groups. In addition to the positive relationship between learning and practice, a grade level difference was found for all three subject matters. In each case, more was learned by students in the more advanced grades than by those in the lower grades. A significant relationship was also found between practice and grade level for elementary students studying the science material. As with the high school literary groups, students in the higher elementary grades learned more science with additional practice than did those in the lower grades. An inter-action between all of the main effects being tested also appeared with this group.

The most important of these findings was that, among elementary students, there were no significant differences in the amount learned through reading and through listening for any of the subject matters under study. Likewise, there was no significant difference in the amount of science learned through reading or listening by high school students, although, the high school group learned more social studies and literature through reading than through listening. The latter is interesting in that it is contrary to what might be expected, the scientific material being considerably more technical in content than either the social studies or literature.

Reading rates were established from the initial rates at which subjects read their respective selections for which unlimited time was given. In an attempt to determine realistic study rates, subjects were instructed to read carefully as they would be tested on what they read. Speed was not emphasized.

It was found that elementary braille students read at rates averaging from 50 to 60 words per minute while print students at the same level read about 18 words per minute faster clocking in with an average rate of 71 words per minute.

High school braille students read at average rates of 65 to 74 words per minute while high school print students read about 12 words per minute faster, their average rate being 83 words per minute.

In order to compare the respective amounts learned through reading and listening, efficiency measures were computed by dividing the average number of correct responses on the tests by the average time spent reading or listening. This yielded a learning per unit of time measure for reading and listening for each subject matter under study at both the high school and elementary levels for both braille and print groups. These values were then compared to give the listening-to-reading efficiency stated as a per cent. Data from the one-day groups were used for these computations. Without exception, listening proved to be the more efficient way to learn. The sheer size of the efficiency percentages favoring listening leave little room for doubt. For elementary braille students: 284% more science was learned, per unit of time, through listening than through reading; 360% more social studies; and 322% more literature. Elementary print students learned 190% more science through listening than through reading; 250% more social studies; and 215% more literature. Braille students at the high school level learned 248% more science by listening than by reading; 228% more social studies; and 183% more literature. The advantage of learning through listening for high school print students was 192% for science; 155% for social studies; and 207% for literature. Remember, these efficiency measures were computed from material recorded at normal rates. They would be increased by use of compressed material if the material was not compressed beyond the point where comprehension would be diminished.

Now, before being misquoted, let me state loudly and clearly; the results of this study in no way suggest that blind students not be taught to read. Factors other than time must also be weighed. I do think that the evidence just reported should be convincing enough to cause us, as educators, to reevaluate our own ideas concerning the means of education to be sure that we are not imposing an additional handicap on our visually impaired students when we ask them to study primarily from printed or embossed material.

There are several practical advantages to the use of recorded materials. Of particular interest to school administrators is the fact that the same recorded books can be used by all visually handicapped students thereby reducing unit cost. In addition to this, recorded books are less expensive than are either braille or large type books. Another advantage is that recorded books take up less storage space than do bound books. Mundane though it may seem, storage is a very real problem. Another advantage to the use of recorded material is that recorded texts provide access to the content of a curriculum for those students who have difficulty in learning to read. They are of tremendous value to older students who lose their sight and never master braille. Still another advantage is that earlier use of recorded material would prepare students for the mode of study which is common to most college situations. Technical improvements have overcome many of the problems once encountered when using recorded material.

A question frequently brought up by teachers concerning the use of recorded material is that its use might cause students to lose their reading skills, most particularly, their braille reading skills. In another phase of the study of reading and listening, students who traditionally study from recorded materials have been intensely interviewed in order to analyze just what the job of studying entails. Note taking was found to be a critical part of the process. Apparently, it is even more necessary for students to take and make use of notes when using recorded material than when reading. Such constant use of a skill would hardly provide an opportunity for it to be reduced.

As educators, our primary obligation is to our students. During the few years we have a student with us, we must give him the basic information he will need to go forth and make his own way. The more information we can impart, the more likely he will be to succeed. How efficient a job are we doing?

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THE DEVELOPMENT OF HARMONIC SPEECH COMPRESSION

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It must be made clear at the outset that this discussion relates to the Harmonic Speech Compressor and not to any other kind of speech compression system. Many of you may have seen the announcement last December regarding the development of Harmonic Speech Compression Equipment by the American Foundation for the Blind. At that time, the Bell Telephone Laboratory gave us the designs for such equipment. At that time, a number of people assumed that AFB had received actual equipment and that recordings using compressed speech would soon be available. It is, therefore, important for you to know that we received designs and have built one prototype machine. It will be some time before other equipment is produced and before recordings are available. The reasons for this will be understood as I describe the problems related to the final production of recorded material.

The Bell Telephone Laboratories had, for some time, been concerned with the rapid transmission of speech for their own purposes. The transcontinental transmission of verbal communications at the normal rate of speed created problems which they wished to resolve by more rapid transmission. After they had developed a speech compression process for their own use, an inquiry led them to believe that their discovery would be helpful to agencies which produce recordings for visually handicapped persons. Following a number of discussions, the Bell Telephone Laboratories presented the designed Harmonic Speech Compressor to the American Foundation for the Blind, with the understanding that we would work out the problems related to the mechanical production of compression equipment. The Bell Telephone design was worked out on a digital computer. Our engineers have developed a prototype piece of machinery which will produce speech at double the original rate at normal pitch.

To enhance your understanding of the present stage of development of this process, I would like to read two excerpts from press releases relating to the Harmonic Compressor. "The Harmonic Compressor permits making recordings of the human voice which can be played at twice their normal speed, while retaining normal voice pitch. The device eliminates the high pitch Donald Duck babble that results when an ordinary record is speeded up. The faster word rate made possible by the Harmonic Compressor, approximates the speech at which many persons sight read printed materials - that is, 300 to 400 words per minute."

The technical announcement reads as follows:

"The Bell Laboratories Harmonic Compressor divides in half the frequency components (harmonics) in a voice recording while preserving the original time duration. By doubling the speed of this half frequency recording in play-back, the frequency components are restored to their original values. The result is a normal pitch double speed recording. If an ordinary recording is played at twice the normal speed, the original frequency components are doubled and the Donald Duck distortion occurs."

As you may know, the American Foundation for the Blind and the American Printing House for the Blind each produces approximately half of the talking book records required by the Library of Congress. When Harmonic Speech Compression becomes feasible for the production of recordings, there will still be many decisions to be made regarding its use. For example, how many persons will wish a given book at the normal rate and how many are likely to prefer the faster rate? There are many areas for research and for development of attitudes toward the use of recorded materials. Those of you who are familiar with the field of reading and remedial reading know that the present emphasis on reading speed is based upon a theory that a person who reads fast actually has better comprehension, because he is engaged with the material throughout the reading time. A slow reader is disengaged or becomes readily disengaged, because his mind wanders and his interest lags as his reading rate falls behind his ability to absorb facts and ideas. We now need to know whether children and adults who use recordings experience the same problems. The research done by the American Printing House and a study done at Fordham University indicate that school children have good comprehension using speeded up recordings. We need more research of this type as well as research relating to the optimum duration for listening at one time.

Perhaps the question of length of attention span in listening to rapid speech is of more concern to adults since it involves a significant change of habit. It is important, however, to devote some research and observation time to this question, as it relates to school age children at various age and grade levels. If the optimum listening period is significantly longer or shorter, educators will be required to rearrange schedules and study periods. As a matter of fact, there is already some research relating to optimum periods for study and class lecture in the field of general education. If children are more easily stimulated and engaged in the material, the listening attention span will be longer. If the rate of speed on the other hand requires such continual alertness to absorb information that the effect is nerve-wracking, the listening periods will be shortened.

One of the greatest concerns in the whole area of "listening to learn." relates to the amount of practice and training required by adults who have established listening habits and by children who may not be accustomed to listening as one of their avenues for gaining information.

I hope that we can use more recordings, do more research and be more creative in using listening as an important avenue for learning. Listening is not a substitute for any method of reading. The fact is that visually handicapped children generally have slow reading rates whether they read braille or print. Listening, even at the present rates of recording, is usually much faster than braille or print reading for these students. We know from the few research projects which have been conducted that children have a high tolerance for experimentation, for situations which adults would find difficult and for adopting new ways of doing things. Many students have learned to speed up their own recordings and to tolerate the resulting high pitched babbling effect.

Another question which has not yet been adequately considered or researched is the difference between reading and listening as ways of securing information. We sometimes say that a child reads through listening. In reality, listening and reading printed or braille symbols are quite different. The symbology and the motor-neural processes are not the same.

Another great challenge that we must face before we are really ready to incorporate the great new possibilities which are inherent in all of the methods of producing rapid speech, lies in our own attitudes as educators. Do you know that most of us actually teach children not to listen? We are addicted to repeating things. Most of us in the field of education of visually handicapped children have been told that we need to talk to them more than to sighted children. We do talk a great deal more and we literally teach children not to listen. As a matter of fact, we teach each other not to listen. We repeat spelling lists at least twice. If we are giving children directions, we go through the whole set of instructions without a moments thought about how much the children can absorb in one stage. We do this because we expect to repeat the whole assignment, apparently in the hope that those who did not get the last half will absorb it on second or third repetition. It is evident that we have not adequately applied what we know about the theories of learning to the theories of listening and theories of stimulating people to listen. Once you are aware of this and begin to listen to yourself in the classroom or dormitory, you will undoubtedly be astounded at the number of times you find yourself expecting that the children will not listen to you and not follow the suggestions or instructions you are making.

For the listener and the instructor, listening is not only a skill but also an attitude. We cannot very well listen to everything we hear. Children particularly have a need to shut out some of what reaches their ears, because they are so continually bombarded in our present day world. One of the greatest challenges we face as educators, therefore, is that of making the important things highly "listenable." Our challenge is to make listening interesting and exciting.

PHILOSOPHY AND GOALS OF A PRESCHOOL PROGRAM

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The movement for day-care of children which has grown as a solution to the needs of poor, working mothers experienced a marked shift in emphasis in the period between the first and second World Wars. The great upsurge of new knowledge in the areas of mental health and child development brought recognition of the very special needs of the young child. It became clear that many of the problems besetting the adult could be traced to emotional deprivation in infancy and early childhood. Also, it became increasingly clear that to merely provide a custodial facility for the child without providing essential assistance in the area of family functioning not only did not help, but sometimes aggravated problems of emotional development.

Fortunately for us, the field of early childhood education had reached a high level of development by the time the first wave of retrolental fibroplasia children began to appear. Neither agencies for the blind nor schools for the blind, in general, had any specific programs for early childhood. In New York State, for instance, there was one pre-school counselor for the entire state. Her role combines that of teacher, social worker, psychologist, advisor, and long-range planner. She would visit the family where there was a blind child at intervals of three to six months or even once a year. To quote one parent, "She told us what we were doing wrong and what we should be doing." When the child reached school age she would instruct the family how to enter him in school. And, she would brook no interferance with "her case" from any other community resource.

Yet, to the everlasting credit of this very good and very brilliant teacher are her efforts with the agencies for the blind of the community who became aware of the increasing problem of blindness in young children and became aware, too, that the methods and services which had for generations been the traditional means of service to the blind could not be applied in a meaningful way to the situation of the blind infant.

In the 1940's and 1950's, with the immense increase in infant blindness, services of a very high professional character were developed in almost every state. Research, such as the Chicago Study, contributed an enormous wealth of understanding.

Now that the RLF plague is past, there seems to be a little feeling that these services are no longer needed since there are no longer such large number of special children to be served. The cost of providing intensive service to a few children is indeed prohibitive. Yet, there is a steady trickle of blind infants and, all too often, infants with severe secondary handicaps in addition to their blindness. It is my belief that while there is even one blind infant in a community, there must be found some means of providing a total service to that child and his parents. The approach to such service may be quite different than the total agency service we have seen developed and may include some very ingenious community engineering.

What have we learned from the past fifteen years of agonizing experience with the RLF babies, we now need to translate into a working plan for the future. We have learned that emotional education begins at birth. It is provided by many people - the parents, a nurse, a maid, other children and, finally, teachers. In fact, it would seem that unless the process of emotional education has been well established by the many individuals who comprise the human environment of the blind child, formal academic education may well be impossible.

We have learned much about family life. We have recognized that a primary goal of pre-school education is to foster the sound development of family life so that the child may have the opportunity to develop within the warmth and security to be found only in the normal family group. The emotional climate of the home and the pattern of inter-action between parent and child is possibly of even greater importance to the sound development of the blind child than it is to the sighted child. The range of stimulation for the blind child is automatically curtailed by his blindness. His energies cannot be easily absorbed in physical activity, nor is his attention distracted by the facinating world of color and motion which delights the sighted youngster.

We have learned much about the trauma to parents whose child is born severely handicapped. And, we have seen how this reacts on the child. The demands of an infant and a young child are constant, enormous and absolute, in both the physical and emotional areas. With the normal child, the mother is usually able to meet these demands because she invests so much positive love in the child, a love which is returned to her one-hundred fold. It is this return from the child that provides the magic fuel which powers the mother's physical and emotional energies. With the blind infant, there is frequently a shutting of this magic fuel. The mother is in a state of depression and shock and frequently the child is physically unresponsive to the mother's sorrow-laden affection. Thus, mother and child both give and receive much less from each other. In addition, the mother, in her state of shock, may well be less responsive to her husband and family as well as to the blind infant. Such emotionally difficult situations are not possible to bear for prolonged periods and the mental health of the mother requires that she set up mechanics of defense and frequently of denial, mechanics which grow and multiply and often mask the true situation by the time a helping individual becomes available to her. Since the young blind child can only develop in an emotional climate that gives him a high degree of security and warmth, the first requisite for a program of service to pre-school children is a counseling service, available in depth to the parents at the time of their first awareness of their child's difference. This mandates a stronger and earlier method of case finding so that the parents can be given help during the most acute period of their suffering. Case finding is not the responsibility of the agency for the blind, either public or private, or of the school for the blind alone. Rather, it is heavily the responsibility of medical and health resources and of community planning groups.

Diagnosis and treatment of the parents is a slow, long-term process and requires a person trained in the areas of human motivation and behavior, and a person capable of forming lasting relationships with the parents, not as a friend and confidante, but as a professional helping person. This worker must be able to evaluate the total home in terms of what the parents represent as people, and what their total behavior is to each other and to other children, as well as to the blind child, for as has been established by Dr. Johnson, "...the parental influence on the child is exerted not so much by what the parent does or says, but by what the parent is. . .in other words, that the parent's total behavior, both conscious and unconscious, has a profound influence on the child."[1] This fact has again been attested to in the most recent study "Mother and Blind Child,"[2] where on very close observation it is noted that the blind child is profoundly influenced not only by what the mother says and does, but perhaps more by the markedly frequent failure of the parent to respond to the child's demand.

The second part of providing service to strengthen the family is interwoven with the process of study and evaluation. It is the providing of whatever help - through direct counseling, through environmental manipulation, or through referral for special services - may be acceptable to the family at the time. There are parents whose own ego development is so poor that they cannot use intensive casework counseling since such counseling demands a personal emotional investment in their own problem.

The simple rule that one starts where the parent is and moves along at his pace has to apply, even though the child's welfare may suffer because of the slow pace of parental response to treatment. The great majority of parents want and can accept help for their child, if it is not too threatening to them. Parents, on the other hand, cannot accept blame, and the kind of direct criticism that is often given to a parent must be construed as blame. In effect, we sometimes say to a parent whom we are seeing for the first time, "What you have been doing is all wrong. . .please change your ways and do it our way." There is a time and a place for direct advice and information-giving. It is not in the first interview. It is not in the ninety-first interview unless a relationship has been established which can support the parent's feeling of distress at the implied criticism.

The second ingredient of the pre-school program is direct educational work with the child. Within the group of young blind children there is a wide range of individual difference, both of personality and intellectual functioning. Differences which are further complicated by the differences in socio-economic and cultural patterns of individual families. Because of these differences, we have learned that there is no timetable of readiness which can be applied to the blind child. There is, rather, the intangible measurement of a child's ability to begin a new activity or a new phase of learning. It is a readiness which will be recognized by a skillful teacher but, frequently, cannot be defined. We have learned, I hope, to avoid restrictive thinking which would tend to limit a child's progress in terms of specific achievements, i.e., admission to nursery school can only be offered when a child is fully toilet-trained. Such restrictive thinking prevents service.

Certainly, among the goals of pre-school education is included the opportunity for a sound experience in a good nursery school to provide the kind of wider socialization and stimulation that will foster the child's independence and maturity. This may be provided either within a specialized agency or within a community set-up. However, working with the blind child does involve an investment of time and energy in learning some of the ways in which a blind child can best be helped to integrate into a group of his peers. It is frequently at considerable personal cost that a nursery school teacher accepts a blind pupil. However, the teacher who invests in the blind pupil usually is rewarded by her experience.

A further essential to pre-school services is availability of good resources for evaluation of the child physically, intellectually and emotionally. Our philosophy of pre-school service requires a base of honesty in dealing with the parents and the community. Parents have to know the reality of their child's problem and they cannot unless we first define it. This is not easily accomplished even in a city as large and as resource-rich as New York. It must be virtually impossible in some small communities. How to secure complete, accurate child evaluation, not once, but at repeated intervals during the child's period of development, is indeed a problem which still merits the full study of many communities. If our goal is to bring the child to the maximum of his capacity, we have to know what that capacity is. If our goal is to eradicate those physical, social and emotional problems which are treatable, we have to know with some exactness the extent and nature of the problem.

A final essential for good pre-school resources is communication between the parents, the community and the agency responsible for the pre-school programming. We have learned that the child cannot be treated as an isolated individual, nor can the parents alone be given service. We have learned that it takes many kinds of persons to provide the services needed by one child in one family. A very brilliant teacher from the Yeshiva Medical School in New York remarked at a meeting only a week ago that it takes a whole contingent of specialists to serve the young child well. It requires one group of specialists who are capable of giving endless warmth and encouragement as the child seeks out those experiences which will enable him to widen and understand his world, another group whose abilities are in understanding the physical and developmental needs of the child, still others who are skilled in the areas of human behavior and family life, and others who have the ability to administer, to bring to bear all of these skills in the right amounts and at the appropriate time for the individual child.

It is seldom that all of these needed skills will be found in one agency and, indeed, there may be many instances where they do not exist in a whole community. Yet, wherever services for the blind child are offered, some attempt has to be made to marshall all of these helping and treating and planning services. There is no simple blueprint to the understanding and organization of a community. The way in which a community develops service will very much depend on the social level of the majority of its population, its nearness to large teaching institutions, its tax structure and, very largely, on its viewpoints on education. In the community which sees its public education system as a social institution, existing to service the total population of its children, one is apt to find good services developed for all of the needs of the children. Where one finds a public school system operating in a sort of distant separation from the rest of the community and seeing its function within the tight limits of academic education, then one is apt to find a poor understanding of the overall needs of the child population and a failure to recognize the need for services other than in the direct area of education.

In any community, however, blind children exist in such very small numbers that we frankly cannot expect to find a wide interest and understanding of their needs. This does not mean that the blind child cannot be served by a community based agency. It does, however, mean that someone who is familiar with the problems of blindness in children has to assume a direct role in community planning and education in order to facilitate the service of the child by the generic agency. It may well mean the formal planning on a high administrative level between the agency or school for the blind and the appropriate community agency or agencies, for a joint program of service including, if it is appropriate, payment for certain services by the agency or school for the blind.

Community cooperation goes a step further than planning, however. It will only succeed if there is complete respect between the agencies each for the work and staff of the other - if there is complete honesty in the sharing of information between the agencies, if there is a genuine willingness to let the client go to the community agency for service with no need to retain some kind of hold upon him. Just as we seek maturity for the child we serve, we must seek and expect maturity from the institutions in our community, and we must search our own behavior for the evidence of pettiness and immaturity which so often creeps in.

In the area of early childhood services we have, then, learned much through the pressures of service to the generation of RLF children. If this knowledge has the opportunity to deepen and ripen and, if there can be added to it the new learning and the willingness to experiment, our philosophy of service will become the reality of practice, and the children served can hope to become truly integrated into a community which we have made ready for them.

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[1] Adelaide Johnson, M.D., "Sanction for Superego Lacunae of Adolescents" Searchlights on Delinquency, (New York: International Universities Press, Inc., 1949), p. 225.

[2] Sadako Imamura, Ed.D., Mother and Blind Child, American Foundation for the Blind, Inc., 1965, (Wm. Byrd Press, Inc.)

HOW SHALL WE SERVE OUR VISUALLY HANDICAPPED PRESCHOOL CHILDREN?

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Some Administrative Considerations

One of the most challenging aspect of special education, and indeed of life itself, is that of training a blind child in the preschool years. So, a career as a preschool worker or nursery school teacher, as the case may be, is a responsibility, a challenge and a reward all rolled into one. It is a responsibility for the child's future, a challenge to the imagination and a reward in seeing tangible progress. These considerations dictate the quality of service we must have, and the personnel we need to secure it.

The administrative pattern used in providing service to preschool visually handicapped children is less important than the kinds of knowledge, skill and insight brought into the program, and the day to day teamwork you get. You need the medical information, and not just ophthalmological, but all round, to know what your child's health, his handicaps, and hopefully, the prognosis. You need psychology to assess your child's abilities, and to understand the best way to deal with him. You need casework to help the parents in freeing themselves from their natural sense of guilt and inadequacy, as well as accepting, not the child's blindness, but the child himself as a person, including all that he is and is not. Then, you need teaching so the child learns what is in his surroundings and how to make use of what he finds. Developing the senses he has, gathering and organizing experience can be a real adventure for child and teacher.

If these disciplines are represented by the pediatrician, the psychologist, the social worker and the teacher, they must have some relationship, even if the pediatrician is the family doctor and each of the other professional persons is from a different service or agency. We hope, however, they would be working for the same school or agency administrator. In any case, they must be on the same team working for the same goals, namely, the child's best development, achievement, and satisfaction in living even though he is handicapped.

It is assumed, perhaps arbitrarily, that the term, "preschool," means that period in a child's development that chronologically precedes school enrollment. It is recognized, also, that children determined to be deviant or multiply handicapped may function for a long time, as would preschool children; but these children will need more intense, special, medical and other services involving specific disciplines in addition to those that have been indicated. Since service to these children entails more complex considerations, it is not included here.

In our approach to preschool programs, for the past 25 years, we have been creatures of fashion. We had preschool workers on state programs, somewhat like orphans. We had them tied in with nursery schools. Then we got special arrangements with children's clinics and eye service. About the same time, came institutes for parents at residential and day schools. Then, institutes were out and parents groups began on local levels. In some places we looked at the whole problem as if it were all casework and tied it in with child welfare services - sometimes specialized and sometimes not. In some areas, we began to develop downward from kindergarten and nursery programs to parents' counseling, and there were even nurseries for blind babies. Some started with schools; some with voluntary agencies; some emphasized teaching, some medical, and others social work. We have even considered it as a special project in a university program.

In Illinois, we had all of these at one time or another, except the nursery for blind babies. But, such resources in other states were used for Illinois children. In fact, we even experimented with making preschool workers out of blind home teachers. We were convinced that, as a long run plan, this would not meet the needs of our children best, but we were forced to do it to meet the emergency call of parents for information and help. It did help, however, to focus attention on the problem and brought allies from the University of Chicago Eye Service, the Illinois Commission for Handicapped Children and the Division of Child Welfare.

It seems a long time ago now when we went begging for private funds to employ our first trained home counselor and assigned her to our Service for the Blind. Within a couple of years after this, the service became a regular part of the Division of Child Welfare.

Some of us thought the institutes held at the residential school had a good many plusses. They brought together in one place many needed disciplines. They had discussions with parents and observed the children in the same setting. They began to develop relevant data and served as a base for work in the parents' homes during the year. But not all parents who needed help could come to institutes and stay for the desired length of time. In some instances, parents' groups, sponsored by an agency, have managed to utilize some of these plusses in a number of localities.

The big problem in emphasizing the four disciplines I have named is that too often the blind child becomes exclusively or primarily a patient, a subject, a client, or a pupil, and now with our emphasis upon the scientific approach, an object of research. The trouble is that all of these added together do not make a live, sentient, human child who must grow up and become an important part of his world of seeing people. The wonder is, really, that our blind children have done so well.

This is why I say that whatever pattern you have, there must be a vital, cross-fertilizing relationship among all the disciplines concerned. The administrator, or supervisor, must not be a mere arbitrator, keeping the specialists happy, receiving their just amount of recognition. He must be one who sees the child as a whole and be able to mold examination data, health charts, case histories and progress reports into a living perspective that keeps the goal of education and preparation for life with a visual impairment, in a world dominated by seeing people, foremost.

Whatever discipline he owes allegiance to is not important, if he can divorce himself from it when he is looking at the child as a whole, vibrant, expressive human being. Also, he must be able to check out diplomatically, biases and misjudgments.

"What am I talking about?" you may well ask. Let me say it this way. The greatest dynamic service the preschool administrator can render is to keep the team seeing the child's needs in terms of his future, as a whole, and not let the opinion of one expert take the whole team on the wrong track. Last year a blind student turned up on the honor roll of a university. Her name recalled a blind child with no speech who screamed better than she did anything else. The point here is that if the psychologist's recommendation had been followed, she would have grown up in a state institution. You say, "This couldn't happen now!" Maybe not to that extreme, but science has not yet ruled out errors in human judgment even among experts.

So, we must have checks and balances among disciplines, even as we do in government. Therefore, whether you start your preschool program with a casework agency, a school of a department of education does not matter so much as that you have all disciplines on the team whether they are in the same school or agency or not. If not, however, better have an interagency coordinating committee that works, not just advises. And, it should have skills, too, not just big names. Better have on this committee, too, a representative of a service for the visually handicapped so some use can be made of its experience and point of view.

I used to think that preschool training should be a part of the agency for the blind, but I have long since come to feel that this could stress blindness at the expense of seeing the whole child. On the other hand, however, residential schools for the blind have developed much knowledge, that should be used, about realistically what the blind child's future can be like.

In this group, of course, I do not have to stress that the service given should point toward school experience. Yet, if the preschool service is not in a school or department of education, this could be understressed. Who should run the show? - an educator who sees life, a doctor who is a disciple of hope, a social worker who loves children or a psychologist who places no limits on the potential for abundant living. It goes without saying, of course, that all these, including those who work directly with the children, will be properly accredited in their respective professions. What I am talking about are indispensable personal qualifications.

Don't have a teacher who dislikes recalcitrant pupils, a doctor who just writes prescriptions, a social worker who sees a blind child as the product of family maladjustments, or a psychologist who has to measure everybody, and under no circumstances, have a researcher.

The research man is important for he discovers knowledge, but for practitioners to use. Have an administrator who believes in miracles, even if they don't often occur, and one who would rather waste money for what looks to be a hopeless child than save money by holding back opportunity where it might be used. The highest compliment a superior ever paid me when I was directing a rehabilitation center for the blind in Chicago was to say that I was doing a courageously impossible job. I was not certain that he considered it a remark of merit, but I did. What training should the administrator have besides his specialty? – the diplomatic service.

If we close the door of opportunity for our handicapped children, who else will open it? The fundamental importance of freedom of movement and meaningful contact with the environment to total successful growth and development cannot be over-emphasized for any child. Any contribution which will facilitate this growth for blind children deserves the thoughtful and critical attention of all of us in the field.

LIBRARIES AND LIBRARY SERVICES FOR VISUALLY HANDICAPPED

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The areas of emphasis in the United States today are knowledge, understanding and education. The need to be informed is of utmost importance. "learning has come into its own."[1] Wherever learning is needed – in school, in business, in government, or in community life – it is the librarian's role to bring together people and the recorded knowledge to fit their need.

In education it is essential that all youth, from the youngest, slowest learner to the brightest upperclassmen, have an abundance of learning materials. These are the basic tools of effective teaching and learning, and it is the right of every student to have these resources easily accessible. "Instructional materials on a subject or problem should be immediately at hand."[2] This is important to any school child, but it is especially important to the visually handicapped child.

The library itself should be cheerful, with an atmosphere that is friendly and inviting. Restful colors of the wall, and warm tones of the wood of furnishings and trim can be combined to form a pleasing background for brightly colored books. Flowers in a planter on the window ledge, and in a pot on the charging desk can help to create a cheerful atmosphere.

Accessibility of materials is necessary. Place the unabridged dictionary on a revolving stand near the main entrance to the library. The morning's newspaper on a stick by the entrance, assures ready accesibility of two of the library's most-used materials.

The card catalog is the key to the library's store of knowledge. It should be near the charging desk, but out of the line of traffic. If a child is working on a class project or pursuing a hobby, the card catalog may direct her to look in the "vertical file" for additional information. Having the vertical file cabinet nearby speeds the search.

Not only does the student need ready access to materials, but he needs a place free from distraction in which to use these materials. No matter how quiet the main room of the library is kept, the necessary activity carried on there is distracting. Four people seated at one table, handling materials and moving back and forth to exchange materials, cannot keep from breaking the chain of thought for each other. "Togetherness" is good in its place, but "aloneness" is better for concentration. The library, as a learning laboratory, should provide individual study areas to allow the student to make the best possible use of the materials of learning. Individual study carrels give the student privacy while he works with, and among the library materials he needs.

Printed materials are not sufficient to the needs of today's student. He must have the audio visual materials of learning, as well. These materials should be supplied on an individual basis so that each person may fit them to his own need. This makes the audiovisual-equipped carrel of great importance in school libraries. Each carrel should be equipped with the machines and controls that make it possible for all types of materials to be used at the student's convenience - television (both closed circuit and commercial), radio, rear view projection screens, record players and tape players. A mechanical core placed at the center of the unit of carrels, and accessible through sliding panels in each carrel, houses the machines necessary to rear view projection, etc.

Adequate study facilities are important to maximum use of materials and equipment, but most important is their effect on learning. Therefore, we should supply our students with these facilities as fast as our situation will allow. However, good library service is not entirely dependent on ideal facilities, but is sometimes found where physical facilities leave much to be desired. The indispensible ingredient in good library service is the librarian with know-how and a sincere desire to serve the needs of her students and faculty. It is this ingredient, more than any other, that keeps library service in proper focus.

Bringing a library into usefulness for people who must read braille, presents some problems of space and materials. They are problems to be solved however, and are not insurmountable. These same problems of space and materials are involved in developing libraries for low visioned people who read large print. Materials in large print are more limited than materials in braille, and so the problem of materials is increased. The person with partial vision is often quite dependent on recorded books and reader service for certain materials such as daily newspapers, pamphlets and clippings, portions of large reference works, etc. This causes an additional problem of space in the form of conference rooms, reading rooms, or sound-proof carrels where the reader can read to the student without disturbing others.

In order for school library service to visually handicapped children to be adequate, the organization of the library must be such that it will allow these children to go about their work with the same confidence and effectiveness other children enjoy. They NEED the feeling of independence that comes from being able to do their work on their own. They NEED the savings in time they can get by proceeding with their work independently. They NEED the feeling of accomplishment that comes from performing, unaided, their assigned tasks. It is true that all people have these same needs, but for the visually handicapped, these needs are far greater! Therefore, it is imperative that their school library be functional for them - that it be a library for them to use!

Devices that will help a student to work with more ease and independence, should be available to the student in the school library. Magnifying devices are often helpful to partially sighted students in their use of printed materials. A rear-view type opaque projector in a darkened area magnifies to a degree which enables some students to read news print with its help. Hand magnifiers kept near the charging desk allow students to choose the type of magnifying device which works best for them. The use of magnifying devices greatly expands the amount of reading material available for some of the partially sighted children.

What can we do about providing adequate library services to the visually handicapped? We can begin where we are. A lack of physical facilities is no excuse for a lackadaisical attitude toward library service to visually handicapped children. The very small school library can render effective service.

The most important single ingredient in effective library service is the professional librarian who is imaginative, creative, energetic, and interested in the welfare of the students and teachers she serves. Such a librarian serves now, with what she has, and improves facilities as fast as she can.

The Library of Congress, through an appropriation of Congress, makes available many of the materials of learning in various media the visually handicapped can use. School libraries serving visually handicapped children can obtain these materials as a loan, a Federal Quota, or as an out-right purchase.

Many church and civic groups prepare materials for free distribution to visually handicapped people. There is an abundance of material! Mr. Eric Josephson of the American Foundation for the Blind, said, "A growing world of books beckons. Can blind people be helped to discover it?" Visually handicapped school children can be helped to make this discovery. The growing world of books can be theirs through good school libraries!

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[1] "At the Very Center. . .The Librarian." (Career Pamphlet) ALA

[2] *Standards for High School Library Programs*. (Chicago: American Library Association, 1960) p. 60-61.

ENRICHMENT THROUGH A TOUCH AND LEARN CENTER

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Curator/Museum, Overbrook School for the Blind
Philadelphia, Pennsylvania

The new Touch and Learn Center for the Blind at Overbrook was built up with very little expense. Most people are interested in helping the blind so you only have to get in touch with the right persons, museums, taxidermists and manufacturers and they will donate which you need. The yellow pages of the telephone book are of enormous value. In difficult cases your senator will help. From the beginning try to get publicity - through newspapers, interviews on radio, TV, etc.

Science and Classic Fairs held in the spring all over the country are a marvelous source for good models which only have to be adapted and brailled for their special purpose to be valuable exhibits.

Try to have sturdy models because they have to stand up to rough treatment by many hundred fingers. Cutaway models with movable parts, if possible even with sound effects are the best. Try to have the models made of the "real stuff" e.g. use wood for log cabins, or stones for building an old bridge span.

It should go without saying that you have to keep in touch with the donors once you receive anything from them, and that you have to build up good will by writing thank you letters, or showing them what you did with their material.

Keep away from the danger of building a curiosity shop. Your main goal is to collect feelable illustrations for braille textbooks. Begin cataloguing all things you get from the very first. You need an alphabetical catalogue of all objects and a second one with subject categories. It is astonishing how much, especially the latter one helps in making up a good exhibition.

I.C.E.B.Y. CONFERENCE PLANS

Dr. Edward J. Waterhouse

Director, Perkins School for the Blind
Watertown, Massachusetts

The fourth quinquennial conference of the International Conference of Educators of Blind Youth will be held at the Perkins School for the Blind, August 20-26, 1967. This program has been internationally planned. The meat of the conference consists of nine workshops. Because three will be running concurrently, no person will be able to attend all nine workshops; they can only attend three. The workshops are: "Evaluation and Assessment of Pupils," directed by Carl J. Davis, "The Teaching of Numbers," directed by Mr. Benjamin Smith and "The Teaching of Home Economics," for which the leader is to be Miss Anna-Greta Janson of Stockholm, Sweden. "Daily Living and Physical Activity," will be led by Mr. Kooynans of the Netherlands, "The Teaching of Science," under the joint leadership of Mr. Colborne Brown of the Royal National Institute for the Blind and Mr. Richard C. Fletcher of Worcester College for the Blind, "The Teaching of Music" will be led by Mr. John DiFrancesco of the California School for the Blind. The last three are "Teaching of Literacy through Braille," Dr. Berthold Lowenfeld; "Teaching of Geography and Social Studies," T.V. Thomas of Hoami College, New Zealand; and "Teaching of Slow Learners" directed by Mr. S.O. Myers of Condover, England. There are some general sessions which will include going to the Massachusetts Institute of Technology for an afternoon of demonstration of technical devices for the blind. There will also be various educational and recreational tours.

Prior to the Conference itself, there will be a week of leadership projects, one for Administrators and one for Educators. Each is to be limited to 40 participants. The two projects will meet in Washington and spend a day at the Library of Congress. The Administrators will then spend a half a day at the Biometrics Division of the National Institute of Health, learning how to evaluate blind people in their communities; they will also visit the American Printing House for the Blind in Louisville, Kentucky. The Educators will visit the Seeing Eye, Inc. at Morristown, New Jersey. The two groups will join in New York City where they will have a program under the direction of The National Society for the Prevention of Blindness; then they will proceed to Boston where they will meet all the other people who have not been participating in the Leadership Projects.

The United States is entitled to six delegates at the ICEBY Conference. The delegates are to be appointed by a special committee selected by President Lee Iverson of the A.A.I.B. The only difference however between a delegate and any other professional person attending the conference is that the delegate will have a vote at the business meeting. An attempt is being made to keep business at a minimum, however, with concentration on educational discussions. Committees have been appointed that will bring in reports, thus most of the business will be accepting these reports.

The financing of the conference has been undertaken by the Board of Trustees of the Perkins School for the Blind. They are making it possible for people coming from overseas to receive their board and room as well as their educational and recreational tours and banquet without any charge whatsoever. This is a major item, particularly when it is necessary that translation facilities be provided. There will not be instantaneous translation at all of the workshops, but there will be at all the general sessions and at least one of each of the workshops. Instantaneous translation will be in English, French and Spanish.

Let me try to give some idea of the kind of contribution I hope that Americans attending will offer. First of all, of course, hospitality - to give these people from overseas an opportunity to meet as many people from all over the United States as possible, in addition, of course, to such members of our own staff who will be on duty and the six delegates and several members of the Executive Committee. Secondly, a certain percentage of people to whom English is the native tongue are necessary. We have found in previous conferences that Americans and people from England frequently have to help interpret where English is the common language. An Indian will say something that may be misunderstood. The English and the Americans in the group can spot what has happened very readily and straighten things out. It is a contributory role which Americans must play and therefore I am hoping that such Americans will come. We have been asked particularly to make sure that even though the program is an international one, that there will be a major opportunity given to learn what is being done in America. It will undoubtedly be many years before the ICEBY will come back to the United States. We are expecting 150 persons from overseas; it may be necessary to limit the Unites States participation to not more than 50.

I attended the first conference of the National Association of Instructors of the Blind in India last month. I wonder how it compared with the first meeting of the A.A.I.B. 100 and some odd years ago. I am sure in many ways it was very different indeed because I know from experience at least up until the early 1950's most of the people attending these conferences were just the Administrators, but in New Delhi, they were mostly classroom teachers. There were 300 who came from all over India; no one attending paid his own expenses. The NAIB raised the money to bring people from all four corners of India to attend that conference and they provided them with free accommodations. The Vice-President of India addressed the conference in its opening meeting and it was a thrilling experience. Many of the Indians did not understand all that was going on; the conference was bi-lingual - it was in English and Hindi. There were many people however who did not know either language well. They were huddled together, the Tamil group for instance was in one corner because someone in that group did know both English and Hindi and was translating for them. The enthusiasm of the group was extremely contagious and it was a very rewarding experience.

When the ICEBY meets in Watertown next year, I hope that the participants will feel something of enthusiasm which we in America do have and thus I hope that around 50 of you will feel that this is sufficiently important to invest a week of your time and expense money.

PRESIDENTIAL REPORT OF THE 1964-1966 BIENNIUM

Lee A. Iverson, President

Chief, Department of Children and Family Services
Springfield, Illinois

After 17 years of close association with various programs devoted to the education of visually handicapped children, I shall always maintain an active interest in this field. However, I realize that this week marks, to a limited degree, a change in my relationship with most of you. Not only will I be leaving the Board as an active member to join the present distinguished list of past presidents, but also my current position which includes administrative responsibility for five different schools for handicapped and neglected children makes it necessary for me to become more active in organizations concerned with deaf, orthopedically handicapped, and dependent children. It is with regret that I contemplate this change, but after eight years as a Board member, I am confident I have exhausted any resources I may have had for making contributions to this Association.

Without any reservations I can say these 8 years of working with the AAIB have been a wonderful experience. I have met and worked with many interesting and talented people whom I would not have otherwise known. I have been able to participate in varying degrees in the development of a number of projects and programs, which in my biased opinion have been beneficial to the visually handicapped children we all attempt to serve in one capacity or another.

I suppose I can best summarize my feelings regarding these last few years with a statement which is so commonly heard from the weary soldier returning from a combat zone, i.e., It was exciting, it was interesting, and I would not take a million dollars for the experience, but I sure hope I never have to do it again.

On a more serious note, I believe all of us owe a great deal to the dedicated people who have contributed so generously of their time and efforts to promote and develop this Association and its goals throughout the years. I, personally am particularly indebted to the entire present Board for its wonderful cooperation, its guidance, and its hard work. I am especially greatful to Max Woolly, our immediate past president, to Stewart Armstrong, the first vice-president, and to Bill English, the second vice-president, for their efforts, their assistance, and their understanding counsel throughout the past two years. Without them my tasks would have been impossible.

Our paid staff also has been and is outstanding. I believe it is safe to say that in 1960 when Maurice Olsen became our first executive secretary many educational organizations had not heard about the AAIB. Mr. Olsen rapidly corrected this situation, and soon individuals and organizations were not only hearing about our Association, but were also hearing from it. I am confident that most of the increased stature the Association may have gained in recent years is due primarily to Mr. Olsen's effective efforts. I am equally confident that all of you shared the Board's deep regrets when he decided to resign as executive secretary to become the Superintendent of the Missouri School for the Blind.

Although many of you possibly have not had the opportunity to become well acquainted with the new executive secretary and to fully appreciate his abilities, I have no doubt that Mr. Paul Thompson will ably carry on and expend the services which were initiated by Mr. Olsen. Without minimizing Mr. Armstrong's work, I can assure you Paul has played an important role in developing this Conference.

In making this report to you I should like to discuss briefly some of the major developments and decisions which have been made during the last two years by the Association and present two matters which I believe the Association should consider in the relatively near future.

For the past two years the Association has had some 20 committees which included over 100 of our members. The members of these committees in general have devoted a great deal of time and effort to expand and improve the services of the Association. Rather than to go into detail at this time regarding the various activities of these committees, I would merely like to express my appreciation to them for their work and refer you to later reports, both written and oral, which will give a more comprehensive overview of their achievements.

During the last two years, the Association has sponsored, co-sponsored or promoted a number of projects and activities which have made significant contributions to the entire field.

It is obvious an Association such as ours with only two full-time paid staff members cannot by itself carry out all of the special projects and provide all of the services needed for the education of visually handicapped children. We have been most fortunate in being able to secure the cooperation and support of a number of agencies in providing additional services. For example, the workshop for industrial arts teachers of the blind held each year at the State University in Oswego, New York, is sponsored cooperatively by the AAIB, the University, the American Foundation for the Blind, and the Vocational Rehabilitation Administration.

The very successful pre-school conference which was held in march 1965 was jointly sponsored by the AAIB and the Missouri School for the Blind. The three regional career days which were held during the last two years would not have been possible without the generous support of the host schools, the American Foundation for the Blind, and the various sponsoring state and federal agencies. The modern mathematics workshop which is now being conducted at Brigham Young University is sponsored by the AAIB, the Utah Schools for the Deaf and the Blind, and the University. The 1965 houseparents workshop certainly owes most of its success to the fine efforts of the administration and the staff at the Indiana School. The youth music program for visually handicapped high school students which is being held this summer at Michigan State University could not have developed without the pooling of efforts by our Association, the American Foundation for the Blind, and Michigan State University.

In my opinion this cooperative approach provides many advantages. Not only does it produce services which it would be impossible for the Association to provide on its own, but it also makes it possible for various agencies and organizations to become interested and active in providing the services required to meet the needs of visually handicapped children. Perhaps one of the major roles of the Association in the future should be to determine areas of special needs and to then stimulate the appropriate organizations to provide services designed to meet those needs.

During the last two years the Board has made a number of decisions and developed new policies which should prove to be beneficial. Naturally, one of the major decisions made was the selection of a new executive secretary. Since the Board was aware of the importance of this choice, a recruitment flyer was mailed to each AAIB member and to a large number of universities and other agencies specializing in education or welfare. After adequate time had elapsed so that all interested candidates could apply, the screening committee made its recommendation which was unanimously approved by the Board.

Due to the increased activity in the areas of health, education and welfare by the Federal Government, the Board has for some time been considering the merits of relocating the National Office from St. Louis to Washington, D.C. Since the advantages seem to far outweigh the disadvantages, it was indicated to Mr. Thompson at the time of his initial interview that it was quite possible the office would be relocated. At the October, 1965 Board meeting, it was decided the office should be moved to Washington as soon as possible. Various locations in Washington were explored by a committee of the Board last winter and an office site was selected. The rental agreement has been virtually completed, and the relocation is scheduled for no later than August of this year.

I realize in a meeting such as this which includes representatives from all areas of the Nation, there is always a rather wide range of opinions regarding the desirable extent of Federal aid to education. However, such recent laws as 89-10 and 89-313 have provided substantial amounts of money which can be used by all types of special education and particularly by the state residential programs for handicapped children. In general the reception of these bills has been good and there seems to be every indication they will be continued and expanded in the future and that an increasing percentage of the total budget for education will be provided by the Federal Government. If these assumptions are correct, it seems imperative that this Association develop a closer liaison with the

Congress and the U.S. Office of Education so our needs can be explained and so the various federal programs which are developed can be interpreted to the state and local education systems.

If 89-313 is an accurate preview of future legislation, I believe all of the administrators present who have struggled with the complications involved in this bill will agree any assistance our National Office can offer in providing early interpretation of future legislation will be most greatfully received.

Since the Missouri School has been extremely generous in the rental agreement it has provided since the establishment of our National Office there in 1960, since the substantial operating grant which was provided by the American Foundation for the Blind will soon expire and since inflation has had its affect on our budget it was obvious increased financial support for the Association must be obtained. The Board and a special dues study committee gave this matter serious consideration and developed a revised dues structure which was presented in the March, 1966 issue of the International Journal and which will be submitted to you for your approval on Thursday morning. If this schedule is approved, the Association will not only become self-supporting, but will also be able to expand and improve the services it provides.

The organization and function of the AAIB-AAWB Braille Authority is another mater which has received considerable study by the current Board. The Board is unanimus in its appreciation of and respect for the present members of the Braille Authority and has been very favorably impressed by their work, but the Board has believed this Authority could be even more effective if the number of members were increased, if a definite term of appointment for each member were established, and if more research could be initiated. During the winter a meeting was held with representatives from the AAIB, AAWB and the Braille Authority to discuss possible reorganization. General agreement was reached, and if current plans materialize, the Braille Authority will be increased to five members. The individual members will be appointed jointly by the two associations with staggered terms, so that one vacancy will occur each year and both associations will make active efforts to secure adequate funding for the Braille Authority so it can expand its research and disseminate functions.

As you know, the Board decided that beginning with the January 1965 issue the Fountainhead would be printed and distributed to the entire membership. The response to this action has been excellent not only by our members but by colleges, universities and departments of education as well. The Board believes the Association has now reached the point where it should have its own publication, and at this time it seems advisable to explore the possibility of acquiring ownership of the International Journal for the Education of the Blind rather than to consider expanding the Fountainhead or developing a new publication. The Board is presently negotiating with the Trustees of the International Journal with the view of transferring the ownership of that publication to the AAIB. There are a number of legal, financial and other considerations which must be resolved before such a transfer of ownership can be accomplished, but it is hoped a decision regarding the feasibility of this plan can be reached next October when both the AAIB Board and the Journal Trustees will meet in Louisville, Kentucky.

Publication costs are one of the major expenditures of the Association, and a committee of the Board is making a careful study of our practices and policies relating to publications and rather extensive revisions are anticipated in the near future. On Tuesday morning you will be asked to approve two amendments to the by-laws which will give this committee greater latitude for its planning.

Our Association has experienced an encouraging rate of growth during recent years and the current membership of approximately 2500 makes it clear we are now so large that only a very limited number of schools could provide adequate accommodations for our Conferences. Due to this increased membership, which we welcome, it is planned that all future Conferences will be held in hotels. In 1968 we will meet at the Royal York in Toronto and in 1970 at a hotel in New Orleans. On Thursday morning you will be given an opportunity to select either Atlanta, New York City, Miami Beach, or Washington, D.C. as the site for the 1972 meeting.

As I mentioned earlier there are two matters which I believe merit special consideration by the Association in the near future. Neither item is particularly new since both have been discussed by the Board and the membership for several years, but no formalized decisions have been reached. Due to a number of recent developments, in my opinion these matters warrant our renewed attention.

As many of you will recall when Mr. Ross Huckins of California was a member of the Board he expressed on several occasions the advantages of selecting a new name for the Association which would more accurately describe our interests and purposes. Since that time the trend of including both blind and partially seeing children in the same classes has increased in both the residential schools and in the local programs, and an increasing number of teacher-training institutions are now preparing teachers to work with the full range of visually handicapped children. Due to the changing philosophy regarding the use of sight by children with very limited vision, many youngsters are now reading print who would have been using braille only a few years ago. Because of these developments and others, it would seem there is considerable merit in selecting a new name for the Association which would indicate our activities in serving all visually handicapped children, not just those who are totally blind or who are braille users, as our present name implies.

Judging from the discussions I have had, very few people object to a name change, but the selection of a name which is more appropriate appears to be the major obstacle. I should like to suggest that the new Board appoint a committee to study this matter and develop a recommendation for your consideration at the 1968 Conference in Toronto.

The second item which I believe requires special attention during the next two years is the extent of our affiliation with CEC. As you know, a closer relationship has been developed with the Council for Exceptional Children during the last few years. At the last two CEC annual Conventions, the AAIB has sponsored luncheon-program meetings which have been well attended. During the last few years officials of the AAIB have had a number of meetings with representatives of the Council for the Education of the Partially Seeing, which is the group within CEC which is primarily concerned with visually handicapped children. A good relationship has developed and several activities will be jointly sponsored by this group and the AAIB in the future.

The Board and National Office of CEC has always been helpful and cooperative, but since we have become an affiliate, the interaction between the two organizations has significantly increased. No doubt all of you are aware of the active role played by CEC in the development of the legislation which resulted in PL 89-10 and PL 89-313 which make state facilities for the education of handicapped children eligible for Title I Funds.

The National Office of CEC has also offered to provide any possible assistance in connection with the establishment of our National Office to Washington, and I am sure Mr. Thompson will find Dr. Geer's counsel to be very helpful when he starts developing our contacts in Washington.

As a final recommendation to the new Board and the membership, I would suggest our relationship with CEC be studied with a view of closer affiliation. I am not necessarily suggesting we become a division of CEC, although such action may offer many advantages, but I do believe the merits of closer affiliation should be evaluated. After all, the vast majority of the education programs for visually handicapped children in the United States are now serving children who, in addition to having a visual loss, have one or more other handicapping conditions. In my opinion, the CEC has much to offer all of us in learning how to better deal with these youngsters who may have such disabilities as mental retardation, emotional problems, hearing loss, or brain injury, in addition to a visual problem. I personally hope the affiliation and joint efforts which have been established between the CEC and AAIB will continue and will be strengthened.

In conclusion, I should like to thank all of you for your cooperation, your interest, and your efforts on behalf of this Association and the youngsters we serve. I believe through your efforts this Association and the total field of education for the visually handicapped has made many important strides during the last several years, but I believe with the recent increases in funds, with the greater availability of staff, and with expanded facilities, far greater progress will be made in the future. It will be an exciting time, and on second thought - I do wish I could do it again.

AAIB-AAWB BRAILLE AUTHORITY REPORT

Bernard M. Krebs, Chairman

Librarian, Jewish Guild for the Blind
New York City, New York

In accordance with its basic responsibility for the development of braille codes designed to express the multifarious symbols and techniques employed in ink-print publications, the AAIB-AAWB Braille Authority is offering a new braille code of phonetics for consideration and adoption.

The proposed code has been drawn from the International Phonetics Association Manual and from the Braille Notation of the International Phonetics Alphabet of the Royal National Institute for the Blind, 1932.

To assure that the information in the code would be current and complete, the Braille Authority was fortunate in having the cooperation and assistance of expert consultants: Professor John Lotz of Columbia University, Dr. Don Graham Stuart of Georgetown University and Mr. Thomas Bickford a blind student at Georgetown University.

Codes which have been officially adopted and which are currently in use include those for music, mathematics, English braille, and textbook techniques all of which have been developed with the assistance of specialists who have contributed their knowledge and services. The Braille Authority has endeavored without success to obtain the volunteer services of experts in the field of chemistry. It seems evident, therefore, that funds must be made available to employ a qualified consultant to assist in the preparation of a braille code for chemistry.

The Braille Authority was requested to comment on a proposed embossed system being developed by Mrs. Evangelia Micropoulou. This code was found to be quite similar to New York Point and therefore offered no new principles for an improved embossed system for touch reading.

In order to update existing codes, the Braille Authority is recommending the approval of a number of additions and corrections to the Textbook Format and English Braille Codes. Such additions will be necessary from time to time so that the braille reader will be provided with the fullest information through the inclusion of braille equivalents for new symbols and formats occurring in ink-print texts. In addition, questions from the field have indicated the need for a number of clarifications of specific rule provisions.

The phonetics code and the additions and clarifications to the English braille and Textbook Format Codes have been made available for study at this convention. The Braille Authority hereby submits these materials for your approval so that they may be incorporated into the official Braille Code.

FINANCIAL REPORT AND 1966 BUDGET

R. Paul Thompson, Executive Secretary

St. Louis, Missouri

The following is a summary of the 1965 financial standing of the American Association of Instructors of the Blind:

Balance Sheet
as of December 31, 1965

Assets		
Cash in Bank (checking and savings accounts)	$ 7,708.30	
Investments	24,210.35	
Interest Accrued	277.61	
Total Assets		$32,196.26
Funds and Liabilities		
General Fund	$10,817.52	
Special Purpose Funds (Life membership, Scholarship, Ways & Means Music Contest, Special Projects)	12,602.98	
Restricted Funds (ICEBY, Convention, Workshops, Publications)	8,218.21	
Fund Balances		$31,638.71
Liabilities (Accounts payable, Payroll taxes payable)	557.55	
		$32,196.26

Receipts and Disbursements
as of December 31, 1965

Receipts		
Membership Dues (Individual, Corporate, Parent Group, Agency, Student, Contributing	$32,098.81	
Other Income (Investment Interest, etc.)	825.93	
Total Receipts		$32,924.74

Disbursements

Salaries, Taxes, Employee Benefits	$14,599.04	
Travel Expense	2,165.96	
Office Expense (Audits, Postage, Telephone, Rentals, Repairs)	2,995.61	
Professional Activities (International Journal, Outlook for the Blind, Dues & Donations)	7,207.80	
Committee Expenses	792.78	
Total Disbursements		$27,761.19
Excess Receipts over Disbursements		5,163.55

Budget for 1966 Calendar Year

Anticipated Receipts

Membership Dues	$29,000.00
American Foundation for the Blind Operating Grant	2,500.00
Other Income (Convention Receipts, Misc.)	1,825.00
Transfer of Funds from Convention and Workshop Funds	770.00
Total Anticipated Receipts	$34,095.00

Anticipated Expenses

Salaries, taxes and Employee Benefits	$17,295.00
Travel	1,800.00
Office Expense	3,400.00
Professional Activities (Journal, Fountainhead, Dues, Donations)	8,600.00
Convention Expenses	1,600.00
Workshop Expenses	1,400.00
Total Anticipated Expenses	$34,095.00

AMENDMENTS TO THE CONSTITUTION AND BY-LAWS OF THE AAIB

The following amendments to the Constitution and By-laws of the American Association of Instructors of the Blind were adopted by the Conference, June 26, 1966:

Article IV of the Constitution was amended to read as follows: "The Board of Directors shall have the authority to appoint replacements for any of the above officers when vacancies occur during the biennium, and to appoint an Executive Secretary, whose duties and responsibilities will be directed by said Board."

Article V of the Constitution was amended to read as follows: "Regular meetings of the Association shall be held in even-numbered years, at such times and places as may be designated by the Board of Directors. Special meetings may be held on the call of the Board of Directors, notice of which shall be sent to all members not less than three months prior to the date of proposed meeting. No meeting shall be held in a location where all members cannot freely participate and be fully accommodated without discrimination, regardless of race, color, religion, national origin or ancestry.

Section 1 of the By-Laws was amended to read as follows: "Eligible voting members from at least fifteen states or provinces, totalling at least one-twentieth of all eligible voting members of the Association, shall constitute a quorum during a regular meeting."

Section 4 of the By-Laws was amended to read as follows: "In addition to the usual duties, the First Vice-President normally shall be Chairman of the Program Committee. The Second Vice-President normally shall be the Workshop Coordinator."

Section 6 of the By-Laws was amended to read as follows: "The expenses of the Association shall be provided by annual dues. The dues structure will be recommended by the Board and presented for approval by the membership at a biennial meeting. Membership types shall include the following:

a. Regular memberships
b. Student memberships - open only to students enrolled full-time in a college or university
c. School corporate memberships
d. Parent group corporate memberships
e. Agency corporate memberships - open to national, regional and local agencies, governmental units, colleges and universities, and other groups and organizations not eligible for school and parent group corporate memberships
f. Life memberships - in addition to regular membership privileges for the lifetime of the member, Life members will receive a special Life membership card and a Life membership certificate

g. Associate memberships - Associate members shall not be qualified for subscription nor voting privileges
h. Contributing memberships
i. Sustaining memberships
j. Patron Standing - a patron is entitled to a Life membership
k. Benefactor Standing - a benefactor is entitled to a Life membership
l. Honorary life memberships - open for retired members only.

From the total amount collected for dues, each qualified voting member, individual or corporate, will be provided an annual subscription to a journal concerned with the education of visually handicapped children and youth."

Section 7 of the By-Laws was amended to read as follows: "Papers and lectures presented at the biennial meeting may be printed and distributed among the membership of the Association. This shall be done in accordance with regulations determined by the Board of Directors. Copies of these publications may be made available on a sale basis to any public libraries or others interested in purchasing them. The Board of Directors may determine the manner in which the minutes will be published and edited."

Section 9 of the By-Laws was amended to read as follows: "A general budget shall be adopted by the Board of Directors and approved by the membership at the biennial meeting. Bills which fall due between meetings of the Board may be paid by the Executive Secretary with the approval of the Secretary-Treasurer."

Two proposed amendments to the By-Laws which would have eliminated the Necrology Committee from those which the President of the Association should appoint, were defeated, indicating that the membership at this time wishes to retain the Necrology Committee.

REPORT OF THE RESOLUTIONS COMMITTEE

Lee Jones, Chairman

Superintendent, Georgia Academy for the Blind
Macon, Georgia

The Resolutions Committee presented the following resolutions which were duly adopted by the Conference:

Resolution #1 "Be it hereby resolved that the 48th Biennial Conference of the AAIB, assembled in Salt Lake City this 27th day of June, 1966, expresses our appreciation to the President of the United States and to Congressional leaders for the valuable contributions to the education of exceptional children made through the passage of P.L. 89-10 and P.L. 89-313, and that we express this appreciation through official communications.

Be it further resolved, that each of us here assembled individually expresses appreciation to his respective Congressman, notifying him of the additional services provided visually handicapped children through the enactment of this legislation."

Resolution #2 "Be it resolved that the Secretary of Health, Education and Welfare be requested by the American Association of Instructors of the Blind, assembled at Salt Lake City, Utah, June, 1966, to make as complete a survey as possible of the numbers of children in the United States who as a result of maternal rubella will be in need of special education programs. The American Association of Instructors of the Blind offers its support to the Secretary to carry out such a survey which should include, where possible, the fullest information concerning the educational potential and special needs of each child. Because of the urgency of this matter it is hoped that statistics may be made available by the summer of 1967."

Resolution #3 "Realizing the amount of time and effort required to plan and carry out such an exceptionally fine Conference program, be it:
Resolved-That we express our appreciation to Mr. Lee Iverson, President Mr. Stewart Armstrong, First Vice-President and Program Chairman; Mr. William H. English, Second Vice-President and Workshop Coordinator; Mr. R.Paul Thompson, Executive Secretary; and other Officers and Directors of AAIB for the most interesting and challenging program; and
Resolved-That we thank the Workshop leaders and their co-workers for the splendid manner in which the workshop programs were organized; and
Resolved-That we express our appreciation to Mr. Robert W. Tegeder, Advisor; Miss Kate Fenton, Chairman; and the Sub-Committee Chairman and Local Arrangement Committee for making this Conference such a pleasant, smoothly-conducted experience for all of us; and

Be it further Resolved-That we express our thanks to the Salt Lake City Chamber of Commerce for handling all matters relating to Conference registration.

ADDITIONAL ASSOCIATION BUSINESS

Conference Site for 1972 Selected: The membership of the Association in attendance at the conference, voted between the following cities for the 1972 AAIB Conference Site: Atlanta, New York City, the Miami Beach area and Washington, D.C. Washington, D.C. was selected.

Membership Dues for 1967 and 1968: The membership of the Association in attendance at the conference, approved the following Membership Dues schedule for the years 1967 and 1968:

Type of Membership	1967	1968
Student	5.00	5.00
Agency	25.00	25.00
Corporate (per student)	.50	.50
Parent Group (per individual)	.50	.50
Individual:		
Houseparents	10.00	10.00
Classroom Teachers	12.50	15.00
Administrators and all others	15.00	20.00
Life Membership	500.00	500.00

REPORT OF THE NOMINATING COMMITTEE

Herbert D. Angus, Chairman

Assistant Principal, Florida School for the
Deaf and the Blind

The Nominating Committee submitted the following slate of candidates for office in the American Association of Instructors of the Blind, for the 1966-68 Biennium:

OFFICERS

President
Mr. Stewart E. Armstrong
Superintendent, Ontario School for the Blind

First Vice-President
Mr. William H. English
Principal, Department for the Blind, Virginia School for the Deaf and the Blind

Second Vice-President
Mr. Carl J. Davis
Head, Department of Psychology and Guidance
Perkins School for the Blind

Secretary-Treasurer
Mrs.Mary K. Bauman
Director, Personnel Research Center
Philadelphia, Pennsylvania

Immediate Past President
Mr. Lee A. Iverson
Chief, Division of Children's Schools
Springfield, Illinois

BOARD OF DIRECTORS

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Director, Program Development Division
American Foundation for the Blind

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The University of Texas

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Consultant in Education of the Visually Handicapped
California Department of Education

Mr. John E. Chiles
Teacher, Arkansas School for the Blind

Mr. Lee Jones
Superintendent, Georgia Academy for the Blind

Respectfully submitted,

Byron Berhow
Randall K. Harley
Durwood A. Hutchinson
Herbert D. Angus, Chairman

The first reading of this report was given Monday, June 27, 1966; the second and final reading was given Tuesday, June 28, after which additional nominations for officers and directors were requested from the floor. None were made however. Each of the above officers and directors was accepted and elected by acclamation.

REPORT OF THE NECROLOGY COMMITTEE

Dorothy Bryan, Assistant Editor,
Field Representative, American Printing House for the Blind

With regret the Necrology Committee reports the loss of the following members of the American Association of Instructors of the Blind. The devoted service to blind children, the helpful contributions and the leadership of these men and women have meant much to our organization and to the lives of visually handicapped children throughout our nation.

We are reminded of 2nd Timothy 4: "I have fought the good fight, I have finished my course, I have kept the faith: henceforth there is laid up for me a crown of righteousness, which the Lord, the righteous judge, shall give me at the day: and not to me only, but unto all them that love his appearing."

Canada
- Dr. Harold J. Vallentyne, Superintendent, Ontario School for the Blind, 21 years of service (1935-1955), died November 3, 1964.

Illinois

Frederick G. Meyers, Director of Music, Illinois Braille and Sight Saving School, 47 years of service (1910-1957), died March 20, 1966.

Leo J. Flood, Superintendent, Illinois Braille and Sight Saving School, 51 years of service (1911-1962), died July, 1964.

Indiana

Mrs. Hattie M. Ward, Home Supervisor, Indiana School for the Blind, 12 years of service (1947-1959), died January 12, 1965.

Iowa

Leslie M. Hays, Superintendent, Iowa Braille and Sight Saving School, 9 years of service (1939-1948), died January 11, 1963.

Mrs. Ella P. Johnson, Primary teacher, Iowa Braille and Sight Saving School, 34 years of service (1901-1935), died September 3, 1964.

Mrs. Mildred M. Powers, Housemother, Iowa Braille and Sight Saving School, 9 years of service (1947-1956), died November 25, 1965.

Kentucky

Roy Haynes, Field Representative, Kentucky School for the Blind, 18 years of service (1948-1966), died May 25, 1966.

Dr. Paul W. Stansbury, Psychologist, Kentucky School for the Blind, 2 years of service (1962-1964), died September 10, 1964.

Maryland

Miss Naomi Gring, Music Teacher, Perkins School for the Blind and the Maryland School for the Blind, 30 years of service, died May 1966.

Dr. Leo Goldbach, Former Opthamologist, Maryland School for the Blind, 17 years service, died June 1966.

New York

Mrs. Doris Brayer, Teacher, New York State School for the Blind, 36 years of service (1925-1961), died January 1966.

Roscoe Chase, Housefather, New York State School for the Blind, 10 years of service (1942-1952), died January 1966.

Anna E. Owens, Teacher, New York State School for the Blind, 37 years of service, (1911-1948), died January 1966.

Vernon Parker, Housefather, New York State School for the Blind, 5 years of service (1953-1958), died August 1964.

Oklahoma

Mrs. Tennie M. Lee, Teacher, Oklahoma School for the Blind, 29 years of service (1925-1954), died February 26, 1966.

Pennsylvania

Lucretia Thorpe, Teacher, Royer Greaves School for the Blind, 18 years of service (1947-1965), died October 20, 1965.

Mrs. Carolyn Lust, Teacher, Western Pennsylvania School for the Blind, 1 year of service (1963-1964), died September 1964.

Ann Springer, Teacher, Western Pennsylvania School for the Blind, 6-1/2 years of service (1955-1959), 1961-1964), died December 1964.

Texas

Mrs. Azalene Bennett, Dormitory Supervisor, Texas School for the Blind, 2 years of service (1962-1964), died July 1964.

Virginia

Alice Horsley, Teacher, Highland Park School, Roanoke, Virginia, 22 years of service (1951-1964), died December 2, 1964.

Lucy Alexandria Huffer, Teacher, Virginia School for the Deaf and the Blind, 19 years of service (1945-1964), died August 8, 1965.

Jake Jacobson, Vice-Chairman of the Board of Visitors of the Virginia School for the Deaf and the Blind, died January 25, 1966.

Washington

Mrs. Della Anderson, Houseparent, Washington State School for the Blind, 6 years of service (1953-1959), died November 1965.

Harry Seeling, Teacher, Washington State School for the Blind, 22 years of service, (1930-1952), died May 4, 1966